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Impact of a Judicial System Reform on Police Behavior: Evidence on Juvenile Crime in Colombia ♣

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Abstract

This paper uses a natural experiment to identify the impact of a judicial system reform on police behavior. The study finds that, after a decrease in the severity of judicial punishment imposed on Colombian adolescents, arrest rates for adolescents in most misdemeanor crimes decreased due to a change in police behavior. The magnitude of this effect ranged between 0.08 to 0.321 standard deviations. The uncertainty on how to operate the new system, the lack of training, and the potential disciplinary sanctions led police officials to reduce arrest rates. Nonetheless, police forces learned gradually how to operate within the new system and adjusted their operations, countervailing the initial negative impact on arrest rates. We present suggestive evidence that the reduction in arrest rates and the lower sanctions increased crime incidents in cities with a large proportion of adolescents in their population. Qualitative evidence collected in focus groups with police officials supports the principal quantitative findings and contextualize the obstacles that led to the decrease in arrest rates and the perceived increase of juvenile crime based on the officials' experiences in the streets.

Key words: Behavior, police officers, crime.
JEL Codes: K14, K42

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Impacto de una reforma al judicial sobre el comportamiento policial: Evidencia del crimen juvenil en Colombia

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Resumen

Este artículo usa un experimento natural para identificar el impacto de una reforma del sistema judicial sobre el comportamiento policial. El estudio encuentra que, tras una caída en la severidad de las sanciones judiciales impuestas a los adolescentes que participan en actividades criminales, las tasas de arresto en la mayoría de delitos disminuye debido a un cambio en el comportamiento policial. La magnitud de la caída varía entre 0,08 to 0,321 desviaciones estándar. La incertidumbre de los agentes de la policía de como operar en el nuevo sistema, la falta de capacitación y las posibles sanciones disciplinarias provocó una caída en las tasas de arresto. Pese al efecto negativo inicial, la policía aprendió gradualmente a operar con el nuevo sistema y ajustó sus procedimientos, lo cual contrarrestó el impacto negativo inicial en las tasas de arresto. El artículo presenta además evidencia que sugiere que, tras la caída en las tasas de arresto y las menores sanciones, aumentó el crimen en las ciudades con un mayor porcentaje de adolescentes en su población. La evidencia cualitativa que recogimos en grupos focales con agentes de la policía corrobora los resultados econométricos y provee un contexto para entender los obstáculos que llevaron a una caída en las tasas de arresto y las percepciones de incremento en el crimen.

Palabras clave: comportamiento, agentes de policía, crimen
Códigos JEL: K14, K42

1. Introduction

By being in charge of maintaining law and order, the importance that the criminal justice system may have on the wellbeing of a country and its citizens is unquestionable. Through activities such as the apprehension, prosecution, punishment and reincorporation of criminals into society, crime is reduced and the respect for laws and institutions is upheld. The police force plays a crucial role in this system. In fact, as detailed by Nagin (2013), the evidence in both the economics as well as criminologist literature suggests that the deterrent effect that the certainty of punishment entails is higher than the deterrent effect of the severity of punishment. Thereby the probability of apprehension and hence the efficacy of the police force is paramount for reducing crime. Understanding the behavior of police officials is thus crucial for policy design.

The literature on what determines police behavior and its final impact on crime levels is scarce. In economics, most of the recent studies focus on how the number of police officers in the street reduces crime levels. Studies such as Di Tella and Schargrodsky (2004), Klick and Tabarrok (2005), and Draca et al. (2011) causally link the increase in the size of the police force in a city with a decrease in its crime rate. On the other hand, criminologist's studies have focused on how different strategies of deploying the police force in a city may reduce crime. Examples include the analysis of hot-spots and problem-oriented policing, both of which have proven effective as detailed by Braga and Bond (2008) and Nagin (2013). Few studies however directly analyze how policemen behavior in the street may change in response to new regulations or programs.

There are few notable exceptions to this rule. Recent papers study how police officers respond when faced with changes in the level of oversight from citizens. Shi (2009) provide causal evidence that an exogenous and large increase in oversight in April 2001 in Cincinnati, which increased the penalty of an officer's error, resulted in a significant reduction in the arrest rates after May 2001. The decrease in the arrest rate was concentrated in those offenses in which a type I error probability was higher since it was entirely explained by a decrease in misdemeanor arrests while felony arrests remained constant. Similarly, Prendergast (2001) shows how increases in external oversight of the police force decreases crime fighting activities such as arrest rates. Mas (2006) identifies that police officers also respond to monetary incentives. Using

information on final offer arbitration cases involving compensation disputes between the New Jersey police department and their municipalities, the author finds that police performance, measured through arrest rates, decreases when officers loose arbitrations. Heaton (2010) analyzes the behavioral consequences on police officers after the introduction of special anti-profiling programs in New Jersey. He finds that after the program was implemented, police behavior change as reflected by a significant decrease in the arrest rate of African Americans relative to white Americans for motor vehicle theft. In summary, these four papers suggest that incentives influence police behavior, as any behavior from rational individuals. Importantly, changes in behavior are immediately observed, particularly changes in the apprehension rates.

This paper contributes to the scant literature on the subject by identifying the impact of changes in a judicial system on police incentives, behavior and their final actions in the streets. Although judicial reforms are implemented around the world, the effects of how they may impact the police force, and through this channel ultimately impact crime levels are seldomly taken into account. In this paper, we use a natural policy experiment that exogenously and significantly changed the criminal justice system for adolescents in Colombia and identify how arrest rates changed after its implementation.

In 2006 the Criminal Justice System for Adolescents (*Sistema de Responsabilidad Criminal de Adolescentes*—SRPA) was implemented representing a system of restorative justice for adolescents involved in criminal activities. This new system brought several changes in incentives both for Colombian adolescents as well as for the national police force. For example, rather than sending juvenile offenders to correctional facilities, SRPA aims to use other strategies, such as rules of conduct, community service, and partial confinement, as its main means of rehabilitation. The new penal system increased the age of imprisonment from 12 to 14 and reduced the severity of punishment received by all teenagers under 18. Moreover, under SRPA jurisdiction, teenagers between 14 and 16 years of age can only be sent to jail for committing crimes such as homicide, kidnapping, and extortion. The new system also changed the procedures though which adolescents could be apprehended, how police officers should treat them, and the mechanisms and procedures to process adolescents in judicial courts when they are now apprehended. The main objective of the SRPA was to align the Colombian legislation with

international treaties and agreements on the rights and particular international protections of children and adolescents and not to reduce juvenile crime.

The adoption of the SRPA may have changed police behavior and crime rates through three channels. First, lower crime sanctions for adolescents, such as increasing the year of imprisonment and lower sanctions for some crimes, reduces the cost of participating in criminal activities. Participation of adolescents in criminal activities may increase as a consequence, leading to higher criminal rates. Second, the behavior of police officials may change in response to the new regulations and procedures. In particular, the adoption of the SRPA in its initial stages brought uncertainty due to a lack of clear rules, and training programs. The fear of facing disciplinary sanctions for mishandling cases of juvenile crime may have led police officials to reduce arrest rates of youth offenders. Third, in the long-term, the effective adoption of the SRPA may reduce youth crime by preventing recidivism.

This paper explores the second mechanism by identifying whether arrest rates of juvenile offenders changed after the adoption of the SRPA. We follow three strategies to explore this mechanism. We first identify if arrest rates by age brackets responded differently to the SRPA. In particular, we test if arrest rates decreased for adolescents between 12 and 13 years of age, and those between 14 and 17 in contrast to adults between 18 and 25, and over 25 years of age. Then we explore whether later measures to adjust the program, such as training sessions, improved the effectiveness of the police force responsible for the child and youth programs. Lastly, we gauge the effect of the SRPA on urban crime rates.

The gradual and exogenous implementation of SRPA across the country provides a natural experiment evaluation opportunity. Taking advantage of the existence of a rich national data base on arrest rates at different ages at the municipality level we empirically estimate the impact of the SRPA on police behavior under a difference-in-difference (DID) approach. We find that after the implementation of the SRPA arrest rates for adolescents significantly decreased for most misdemeanor crimes. The magnitude of this effect varies between 0.08 to 0.321 standard deviations depending on the type of crime and the age group analyzed. The fact that the arrest rates for other age groups (between 18 and 24, and over 25), as well as the homicide arrest rate

for all age groups (including adolescents), did not decrease suggests that there was indeed a change in the behavior of the police force regarding juvenile capture practices and not a mere decrease in police efficiency. Results also suggest that institutions such as the police force are not rigid and vary in time. In particular evidence in favor of the hypothesis that the police slowly learned how to function under the new legal framework is found. Similarly to Banerjee et al (2012), we find that police training gradually improved the operation of police officials within the SRPA. Finally, we provide suggestive evidence in favor of the hypothesis that juvenile crime, and general crime rates, increased after the SRPA.

The main empirical results are robust to different placebo exercises which suggest that there was indeed an important effect of the changes in judicial system in the behavior of the police force. In order to understand what may have been the channels and motivations of this change the empirical evidence is complemented by detailed qualitative evidence obtained from three focus groups with police officers. Results suggest that police officers perceive an overall increase in juvenile delinquency and significant obstacles for translating the rights-based focus of procedures stipulated in the SRPA into practice in the streets.

The remainder of the paper is organized as follows. Section 2 describes the implementation of the new SRPA in Colombia and provides preliminary evidence on the exogeneity of its implementation in time and space in the country. Section 3 explains the empirical strategy used in the study while section 4 describes the data available to carry it out. Sections 5 and 6 present the main quantitative and qualitative results respectively. Section 7 provides a conclusion and synthesis of main findings.

2. Law 1098 of 2006: Criminal Justice System for Adolescents in Colombia

As in many countries, Colombia has separate justice systems to prosecute crimes committed by adults and children and adolescents under 18 year of age. The juvenile justice system - comprised by a special police force, judges, prosecutors and correctional facilities - handles crimes committed by minors. Between 1989 and 2006 Decree 2737, known as the *Código del Menor (the Code for Minors)*, established the procedures for the investigation, prosecution and

sentencing of all those under 18 years of age who were involved in crimes. Although juvenile punishments were more lenient than those reserved for adults, the Code had a punitive basis behind. If found guilty of penal crimes, juveniles between 12 and 18 years of age were sent to correctional facilities. In addition to punishment, these facilities sought to rehabilitate juvenile offenders and provide formal education. When adolescents older than age 16 committed a serious offense, the case was sent to an adult court. Children under 12 were not held legally responsible for crimes. They were handled by social workers, who were responsible for providing support and investigating social conditions in their homes. When they reached age 18, individuals were tried as adults[1].

In November 2006, the Colombian Congress approved the Code for Childhood and Adolescence. One of its main objectives was to align the Colombian legislation with international treaties and agreements. Specifically, Colombia sought to incorporate the declaration on the International Convention on the Rights of the Child of 1989 into its judicial system (Benavides, 2012). The Code prompted the implementation of a restorative justice system for juvenile crime, called the Criminal Justice System for Adolescents (SRPA), with the aim of establishing the rights of children who had committed crimes while recognizing their responsibilities (Benavides, 2012).

Law 1098 creates a restorative juvenile justice system that puts less emphasis on punitive strategies and defines alternative sanctions. In particular, the SRPA changed the age and conditions of imprisonment, the sanctions, as well as the apprehension and legal procedures needed when an adolescent was a criminal suspect. Regarding the sanctions, the SRPA seeks to provide redress to victims and rehabilitate and reintegrate offenders. Rather than sending juvenile offenders to correctional facilities, the system aims to use other strategies such as abiding by rules of conduct, performing community service, and being partially confined. In addition, the new code rises the age at which young people enter the juvenile justice system from 12 to 14 years old. Adolescents in these age brackets are not held legally responsible for crimes. Juvenile offenders are placed in the care of the Colombian Institute of Family Welfare (*Instituto Colombiano de Bienestar Familiar*—ICBF)[2], which protects them and ensures that they are

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[1] See Decree 2737 de 1989.
[2] Government institution responsible for children and youths' programs.

enrolled in school. Such children are neither confined nor punished. This system does not apply to those who have committed homicides, kidnapping, or extortion; in such cases, juveniles are sent to correctional facilities.

The system also modified the procedures of how infants and adolescents should be apprehended, prosecuted and criminalized in case they are found guilty. Two particular changes aiming to protect the rights of juvenile delinquents forced police officials to adopt complex procedures on the apprehension and subsequent stages, causing uncertainty among the police force on how to operate with criminal youth. First, when apprehending a juvenile, even if caught in the very act of committing an offense, officials should exercise particular care on the process to avoid any harm for the adolescent. The risk for police officials on overriding the appropriate procedures carried legal sanctions, including fines and expulsion. Second, Law 1096 required specific knowledge and training on the new restorative justice system for the police officials, judges and prosecutors involved in the SRPA system.

The adoption of these two provisions was slow. The initial investment allocated to implement the SRPA was meager or in some cases non-existent. Thereby, police officials, judges and prosecutors received little training on the initial phases of implementation. In addition, the police did not develop initially a clear protocol for officials to follow when apprehending youth and bringing them to the judicial courts. This, paired with the harsh disciplinary sanctions for failing to abide the new protocols, created uncertainty among police officials, who restrained often times to apprehend criminal youths to avoid future sanctions (see Section 6).

The new system was implemented gradually across the country. The central government created six groups within Colombian judicial districts that implemented the SRPA at different points in time, where adoption began in March 2007 and ended in December 2009[3]. Local governments did not participate in the decision-making process regarding to which judicial system where they going to be part of nor at which moment in time they should introduce the new system. Rather it

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[3] The six groups were the following: (i) Stage I: Bogotá and Cali; (ii) Stage II: Armenia, Manizales, Pereira, Buga and Medellín; (iii) Stage III: Tunja, Santa Rosa de Viterbo and Popayán; (iv) Stage IV: Cucutá, Pamplona, Bucaramanga and San Gil; (v) State IV: Antioquia, Cundinamarca, Ibagué, Neiva, Barranquilla, Santa Marta, Cartagena, Riohacha, Sincelejo, Montería and Valledupar; and (vi) Stage VI: San Andrés, Villavicencio, Pasto, Quibdó, Yopal, Florencia and Arauca

was decided by center mandates. Furthermore, the judicial districts in each implementation group and the exact dates of implementation were changed three times through decrees issued by the national government. Table 1 summarizes the decrees which exogenously changed the implementation in space and time across the country and which we argue enable us to understand how police behavior changed after the judicial system reform. As observed, the different decrees changed the number of implementation phases, the municipalities included in each phase, and the dates in which they started to be implemented.

Table 1. Decrees Issued to Organize the Implementation of the SRPA

Decree related with SRPA implementation phase	Changes implemented
Decree 4652 (December 27th , 2006)	Defines five implementation phases: assigns judicial districts to each phase and defines the implementation dates for each one. Implementation begins on March 15 of 2007 and ends on July 1st of 2009
Decree 1494 (May 4th, 2007)	Adds a new judicial district to Phase 2.
Decree 3951 (October 12th, 2007)	Modifies the judicial districts and implementation dates in Phases 2, 3, 4 and 5. Implementation begins on March 15 of 2007 and ends on October 1st of 2009
Decree 3840 (September 30th , 2008)	Modifies the judicial districts in Phases 2, 3, 4 and 5 and creates Phase 6. Additionally modifies the implementation dates of Phases 4 and 5. Implementation begins on March 15 of 2007 and ends on December 1st of 2010

Source: Decrees 4652,1494,3951 and 3840. Authors summary

Preliminary evidence, presented in Figure 1, provides additional evidence for this exogeneity. It depicts the mean juvenile arrest rates for theft for the six different implementation phases. The figure shows no apparent national trend on juvenile crime that could have motivated legislators to create the new judicial system for youth crime in the country. For some phases the arrest rates were decreasing, for others increasing and yet in others they were relative stagnant. This is not surprising since, as detailed above, the main motive for the change was based on the alignment of the Colombian legislation to international treaties, in particular the compliance with the 1989 United Nations Convention on the Rights of the Child. Moreover, there is no clear trend on the order of the stage implementation within its borders based on juvenile arrest rates.

Figure 1. Mean arrest for theft: youth between 8 and 18 years of age in state capitals
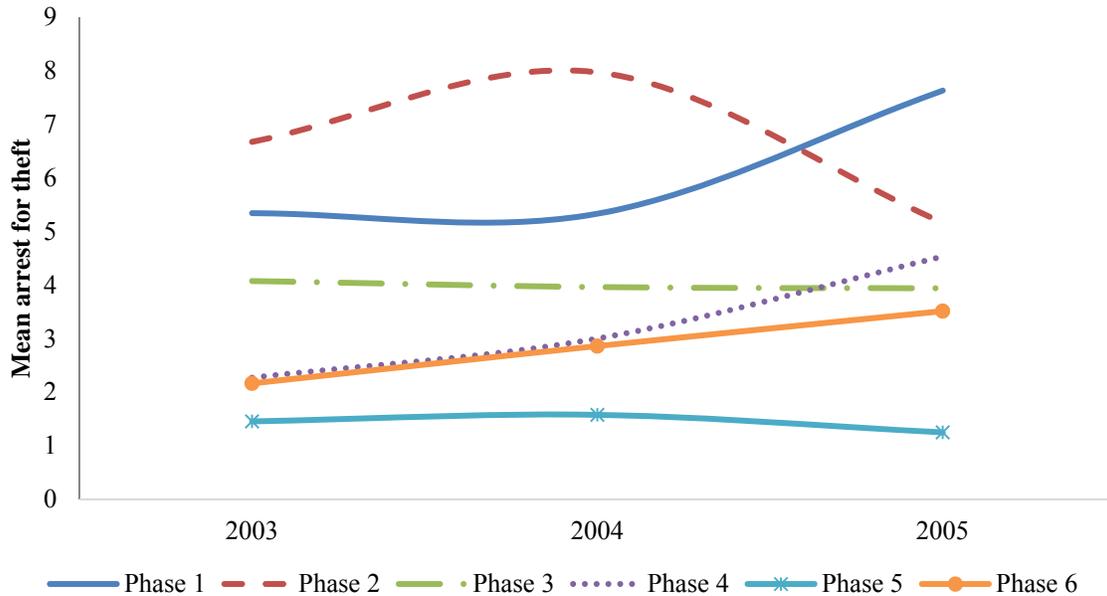
In order to prove this exogeneity in a more formal way, we follow Galiani et al. (2005) and examine the determinants of the gradual implementation of SRPA in the country. We estimate a duration model in which the probability that a given municipality implemented the new SRPA is a function of both constant and time-varying characteristics. We pay particular attention to the effect of time-varying observables related to arrest and crime rates on such probability, which ideally should not be associated with the moment of implementation.

3. Empirical Strategy

The purpose of this paper is to identify whether judicial system reforms have an impact on police behavior measured as arrest rates of criminal youth. The implementation of the SRPA may affect the arrest rate for criminal youth through three mechanisms. Firstly, by increasing the year of imprisonment from 12 to 14 years of age, the costs of participating in criminal activities decrease for youths in this age bracket. These lower costs may increase crime and cause an ensuing hike in arrest rates for adolescents between 12 and 14 years if police behavior remains unaltered.

Their participation in criminal activities may expand further if criminal gangs actively recruit them given the lower sanctions they face under the new system. Secondly, police officials may modify their behavior in response to the new regulations and procedures. Because the SRPA caused uncertainty amongst police officials during the initial stages of the implementation, they may prefer to reduce arrest rates in order to avoid potential disciplinary sanctions for mishandling cases of juvenile crime. Thirdly, in the long-term, the impact of Law 1098, if rightly implemented, should reduce youth crime by preventing recidivism and thus a drop in arrest rates should follow.

Our paper identifies whether police behavior changed after the SRPA. In particular we probe the second mechanism, namely whether arrest rates decreased after the adoption of the new judicial system. Since we focus on the immediate years after Law 1098 was issued, we are estimating the short-term effects. A negative impact of the SRPA on arrest rates for criminal youth is therefore the result of a change in police behavior and not the result of a positive impact of Law 1098 through less youth recidivism and lower involvement of adolescents in criminal activities.

To identify this effect, we use the exogenous variation through time and regions created in the implementation of the SRPA in Colombia. Formally, we estimate the following reduced form equation in which the dependent variable is the rate of arrest for different age groups and crimes in each municipality and time

$$ArrestRate_{i,m,t}{}^{c,s} = \delta SRPA_{i,m,t} + \gamma Crime\ Rate_{i,m,t-1}^{s} + \beta X_{i,t} + \alpha_{m,t} + \mu_i + \varepsilon_{i,t}$$

(1)

where the dependent variable, $ArrestRate_{i,m,t}^{c,s}$ is the capture rate per 100,000 inhabitants of cohort c in municipality i, in month m and year t for crime s such as homicides, theft, personal injuries as well as illegal possession of weapons or drugs. The specific groups of cohorts chosen go in hand with the changes that the SRPA introduced. As previously explained, the enactment of Law 1098 may have changed both the incentives for adolescents to commit crimes to different degrees according to their ages as well as police behavior on the streets. Both these probable changes may have had a differentiated impact on arrest rates at different ages and different types

of crimes. Therefore, we use these changes in incentives to create five excluding cohorts of interest: between 8 and 11, between 12 and 13, between 14 and 17, between 18 and 24 and 25 or above years of age[4].

$SRPA_{i,m,t}$ is a dummy variable that takes the value of one on the precise month and year in which the new SRPA started to be applied in municipality i and zero otherwise. Given the gradual exogenous implementation of SRPA, this dummy has variation both across time and space, allowing us to causally estimate its effect on our variables of interest. Under this specification, the coefficient of interest is δ, which, if significant, will imply that the implementation of the SRPA may have changed the incentives of the police force to make arrest of individuals from different age groups allegedly guilty for different types of crimes. In particular, we expect to find a negative impact for arrest rates of youth between 12 and 14 years, and between 14 and 17 years, albeit weaker, given that the lower sanctions benefited mostly these age brackets, and no effect for other age brackets. Also, the impact should concentrate of other crimes different than homicide as sanctions for the latter were not modified with Law 1098.

We further include the lagged crime rate in municipality i at time t ($Crime\ Rate_{i,m,t-1}$) in order to control for possible trends of crime in the municipality that may also explain arrest rates. The main problem with the use of this last control is that it may create endogeneity problems that could bias our coefficient of interest. Hence, we run several specifications with different lags of this variable as well as without it at all. Since results are robust to the different specifications, we only report the results for the estimations controlling for lagged crime rates. Finally, we control for a vector $X_{i,t}$ of time varying municipality's characteristics including economic performance (trade and industry tax revenues as a proxy for municipal GDP), supply of educational services (investment in education per capita), demographic variables (population density and percentage of the population living in rural areas), institutional conditions (fiscal performance), and conflict dynamics (number of forcefully displaced). The estimations include year*month ($\alpha_{m,t}$), and municipality (μ_i) fixed effects in order to control for national trends in crime rates and unobservable municipality characteristics that are time invariant, respectively. Finally, even

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[4] All regressions were also estimated using only three excluding age cohorts: under 14, between 14 and 17, between 18 and 24 and 25 or older. Results are very similar and available upon request.

though controls include the presence and magnitude of conflict attacks, in order to take into account possible confounding effects between conflict and crime in Colombia, we estimate specification (1) only for state capitals which are all urban areas in which the armed conflict problems of the country are less pronounced. Standard errors are clustered at the municipality level.

The gradual implementation of the SRPA allows us to further test whether there is any learning process among the police force after changes in legislature are implemented. In particular, after the initial phases, the lack of training of police officials was evident, pushing the police force to train officials as required in Law 1098 (see Section 6). We estimate the following regressions to identify whether the impact of SRPA differs according to the different phases and if such an institution gradually learns how to act under a new set of rules

$$ArrestRate_{i,m,t}^{c,s} = \beta_1 SRPA1_{i,m,t} + \beta_2 SRPA2_{i,m,t} + \beta_3 SRPA3_{i,m,t} + \beta_4 SRPA4_{i,m,t} +$$
$$\beta_5 SRPA5_{i,m,t} + \beta_6 SRPA6_{i,m,t} + \gamma Crime\ Rate_{i,t-1}^s + \rho X_{i,t} + \alpha_{m,t} + \mu_i + \varepsilon_{i,t} \qquad (2)$$

We interact the SRPA dummy with dummies of each specific phase of implementation and obtain $SRPAk_{i,m,t}$ where k denotes each of the six implementation phases. Under this specification our coefficients of interest are β_k, which estimate the impact of SRPA implementation in each of the k implementation phases on the different arrest rates and age cohorts.

4. Data

Four sources of data are used in this paper. The first is data on arrests from the Ministry of Defense covering the period from 2003 to 2010. Police records include information for each arrest: type of crime committed, age of the offender, date (month and year), and municipality. The information covers a broad range of crimes including physical injuries, total theft (including theft against people, commercial establishments, residences, and vehicles), illegal possession of weapons, drug carrying, and homicide. This enabled us to estimate arrest rates for each of the five types of crime and for each of the five age groups excluding cohorts as explained above.

The second source also comes from the Ministry of Defense and provides information on each crime incident that occurred for the period ranging from 2003 to 2010. For each crime incident, the data provide information on type of crime (homicides, theft against people, commercial establishments, residences, and vehicles), the date of the incident (month and year), and the municipality allowing us to control for crime levels in some of the specifications. The third source of data is the CEDE panel. This panel collects yearly information on a wide range of yearly municipal characteristics starting in the 1980s. We use trade and industry revenues, investment in education per capita, population density, the percentage of the population that lives in rural areas, an index for fiscal performance, and the number of forcefully displaced persons.

Tables 2A and 2B present descriptive statistics for the outcomes and control variables. Arrest rates for the five types of crime increase with years of age. The crimes with higher arrest rates are theft and drug carrying. For children between 12 and 13 years of age, the arrest rate for both crimes is: 0.221 and 0.103 per 100.000 children respectively (Table 2A). The crime with higher incidence is petty theft to people (14.44 per 100.000 people), followed by residential theft (6.69), and vehicle theft (4.43). The average homicide rate between 2003 and 2010 is 2.66 per 100.000 habitants (see Table 2B).

Table 2A. Descriptive statistics: outcome variables

Variable	Observations	Mean	Standard Deviation
Arrest rate: physical injuries (8-11 years)	2592	0.002	0.024
Arrest rate: physical injuries (12-13 years)	2592	0.019	0.146
Arrest rate: physical injuries (14-17 years)	2592	0.424	0.915
Arrest rate: physical injuries (18-24 years)	2592	1.646	2.232
Arrest rate: physical injuries (over 25 years)	2592	3.780	4.577
Arrest rate: total theft (8-11 years)	2592	0.061	0.425
Arrest rate: total theft (12-13 years)	2592	0.221	0.680
Arrest rate: total theft (14-17 years)	2592	2.761	3.200
Arrest rate: total theft (18-24 years)	2592	5.610	4.352
Arrest rate: total theft (over 25 years)	2592	7.202	5.520
Arrest rate: weapon carrying (8-11 years)	2592	0.001	0.015
Arrest rate: weapon carrying (12-13 years)	2592	0.013	0.060
Arrest rate: weapon carrying (14-17 years)	2592	0.399	0.680
Arrest rate: weapon carrying (18-24 years)	2592	1.216	1.229
Arrest rate: weapon carrying (over 25 years)	2592	2.193	1.969
Arrest rate: drug carrying (8-11 years)	2592	0.014	0.088
Arrest rate: drug carrying (12-13 years)	2592	0.103	0.407
Arrest rate: drug carrying (14-17 years)	2592	2.174	4.740
Arrest rate: drug carrying (18-24 years)	2592	5.076	7.564
Arrest rate: drug carrying (over 25 years)	2592	8.455	12.023
Arrest rate: homicides (8-11 years)	2592	0.000	0.003
Arrest rate: homicides (12-13 years)	2592	0.002	0.026
Arrest rate: homicides (14-17 years)	2592	0.076	0.236
Arrest rate: homicides (18-24 years)	2592	0.427	0.741
Arrest rate: homicides (over 25 years)	2592	1.174	1.489

Source: Authors' calculations based on Ministry of Defense and CEDE municipal panel

Table 2B. Descriptive statistics: control variables

Variable	Observations	Mean	Standard Deviation
Trade and industry tax revenues per capita	2592	0.052	0.049
Investment in education per capita	2592	186.027	116.857
Fiscal performance	2592	66.593	9.105
Population density	2592	12.718	19.016
Percentage of the population living in rural areas	2592	0.120	0.103
Number of forcefully displaced	2592	423.289	639.867
Homicide rate	2592	2.664	2.279
Theft rate to people	2592	14.445	12.523
Theft rate to commerce	2592	3.931	3.246
Theft rate to residences	2592	6.689	6.880
Theft rate to vehicles	2592	4.432	4.028

Source: Authors' calculations based on Ministry of Defense and CEDE municipal panel

Finally, we include qualitative data obtained during three focus groups conducted with police officers in Colombia's capital city Bogotá and in Tunja, a small city in the state of Boyacá. The inclusion criteria guiding sampling procedures for recruitment of the research population and concentration of the geographic focus included the following considerations: 1) Police officers involved in the study should be affiliated with the division of childhood and adolescence; 2) Police officers should be affiliated with the National Police since before the transition to the SRPA in order to be able to discuss perceived changes in police behavior and incentives; 3) In terms of seniority, police officers of two different ranks were included in the focus groups (4 patrol officers and 8 deputies overall) in order to incorporate the perception of different ranked officers according to their experiences and interactions with adolescents in the streets and in institutional spaces; and 4) The case selection of Bogotá and Tunja was conducted by drawing from quantitative results indicating that both cities experienced decreases in juvenile capture rates after the transition to the SRPA. In addition, Bogotá was in the first phase and Tunja in the third, allowing us to explore the learning process of the police. The focus group design incorporated four different elements for interactive inquiry in order to explore the perceived changes in police behavior and incentives after the transition to the SRPA. Each focus group started with a general conversation about the SRPA, followed by a timeline exercise in in order to guide a conversation in which the officers mapped out their observations regarding the 'before (*antes*)' and 'after (*después*)' the transition from the Code for Minors to the SRPA (see Figure 2).

Figure 2. Timeline exercise in focus groups: before (*antes*) and after (*después*) SRPA
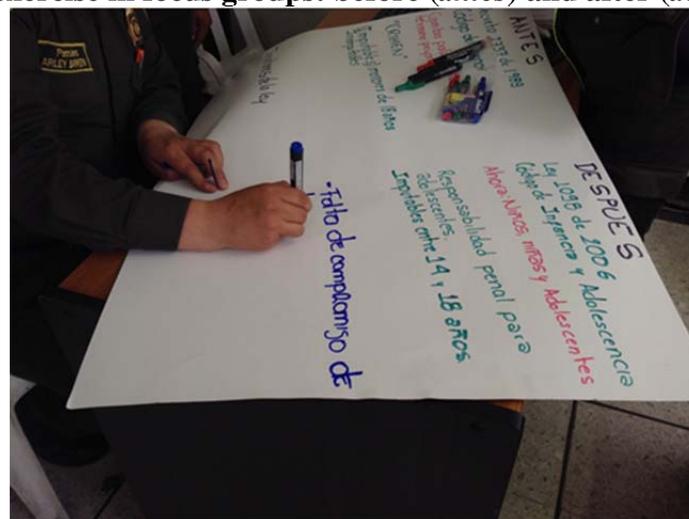
The third component of the focus group design included a conversation about the perceived increase or decrease in the number of arrests and in juvenile criminal activity (focusing on four particular crimes including theft, homicide, illegal possession of weapons and illegal possession of drugs). This third activity during the focus group also incorporated a hands-on activity in which the officers drew arrows next to each type of criminal activity to indicate an increase or decrease. The use of interactive drawing and conceptual mapping exercises to visualize the changes experienced by officers in the streets was particularly useful as a means of stimulating the focus group conversation and generating productive dialogue among the four officers who participated in each focus group and the research team (see Figure 3).

Figure 3. Interactive drawing and conceptual mapping exercise
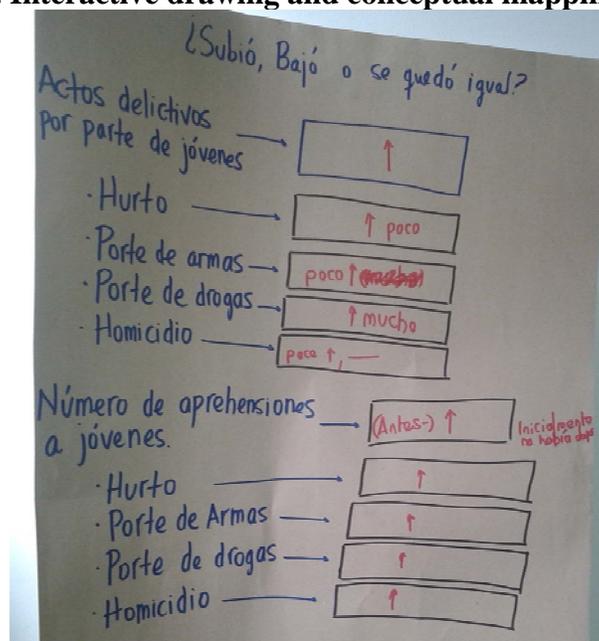
Finally, the interactive focus group activity concluded with a photo-elicitation activity in order to stimulate reactions and dialogue regarding profiling practices, stereotypes and imaginaries surrounding urban adolescents and youth in particular urban spaces where juvenile criminal activities are typically concentrated. This fourth component of the conversation explored the relationship between the police force and adolescents and to explore the levels of empathy the officers expressed when analyzing each photograph or situation.

5. Quantitative Results

5.1 Exogenous Implementation of Law 1098

The identification strategy relies on the exogeneity across time and space of the SRPA in Colombia. Although the evidence presented in section 2 suggests that the date is indeed exogenous given that it was centrally defined and changed several times in the process, we carry out a formal test to provide evidence in favor of such hypothesis. We follow Galiani et al. (2005) and estimate a duration model to formally provide evidence on the natural policy experiment created by the Colombian central government in the gradual rollout of the SRPA system across the country. We estimate the probability of implementing the SRPA in municipality i at month m and year t on both time-varying shocks and pre-treatment municipal characteristics that may be related to arrest rates. We include as time-varying characteristics each municipality's current income levels and investments in education and health. As controls, we also use shocks to different crime rates in the previous month in order to test whether they are related to the phase in which each municipality began implementing the SRPA. We further control for the average values of these same measures and for municipalities' characteristics in 2003 prior to the enactment of the law. Finally, and most importantly, we include the average arrest rate as well as its change in time in order to evaluate whether the implementation phase was in any way correlated to these last variables of our interest in this paper. In all models, we control for duration dependence linearly.

The results in Table 3 show that the gradual implementation of SRPA can be treated as an exogenous policy experiment regarding the mean as well as changes in average capture rate at the municipality level. Neither the shocks nor its mean value are significantly correlated with the timing of the implementation of the SRPA. Although not shown, the model also includes measures of changes and means of several crime rates, measures that are not significant either. These results corroborates that indeed the timing of the SRPA implementation was not correlated with our main variables of interest and can be treated as exogenous and its impact on arrest outcomes can be undertaken using OLS..

Table 3. Duration model - Probability of implementing the SRPA

Variables	OLS
Duration dependence	0.000990***
	(0.000109)
Change in arrest rates	-2.21e-05
	(0.000153)
Average arrest rates	8.47e-05
	(0.000222)
Observations	2187
R-squared	0.042

Controls include: the changes and levels of crime rates such as homicides burglary, theft, per capita Industry and Commerce tax collection, per capita investment in education, fiscal performance, density of population, rural index, displaced population arrival and lagged crime rates.

Standard errors at the municipality level in brackets, *** p<0.01, ** p<0.05, * p<0.1.

Source: Authors' calculations based on Ministry of Defense and CEDE municipal panel

5.2 A Change in Police Incentives?

Preliminary evidence on the impact that the change in the judicial system brought to police behavior is presented in Figure 4. We depict juvenile arrest rates of three different crimes one year prior and one year after the implementation of SRPA in the judicial districts from the first and second state phase. Three facts are important to mention from these figures. First, as previously established in the criminology literature (Blumstein et al, 1988; Farrington, 1986), criminal careers start early in life and reach their peak at ages 16 and 17. Thereafter, there is a sharp reduction in the arrest rate of juveniles, probably due to the deterrence effect that reaching adulthood and being subject to adult penal law may have on criminal behavior (Levitt, 1998). Second, this preliminary evidence suggests that just one year after the implementation of the SRPA, the arrest rates of adolescents younger than 18 years of age decreased sharply for the three crimes. The adoption of the SRPA seemingly caused a change in police behavior with respect to criminal youths probably as a response to the uncertainty the new system brought and the higher risk of disciplinary sanctions. The capture rate of older individuals appears to actually increase in the same period suggesting that the decrease was not a result of police general inefficiency. Third, the comparisons between phase 1 and phase 2 suggest some learning on how to operate under the new judicial system occurs. Although arrest rates also drop in phase two, the reduction is less steep.

Figure 4. Arrest rates by age: one year before and one year after the implementation of SRPA
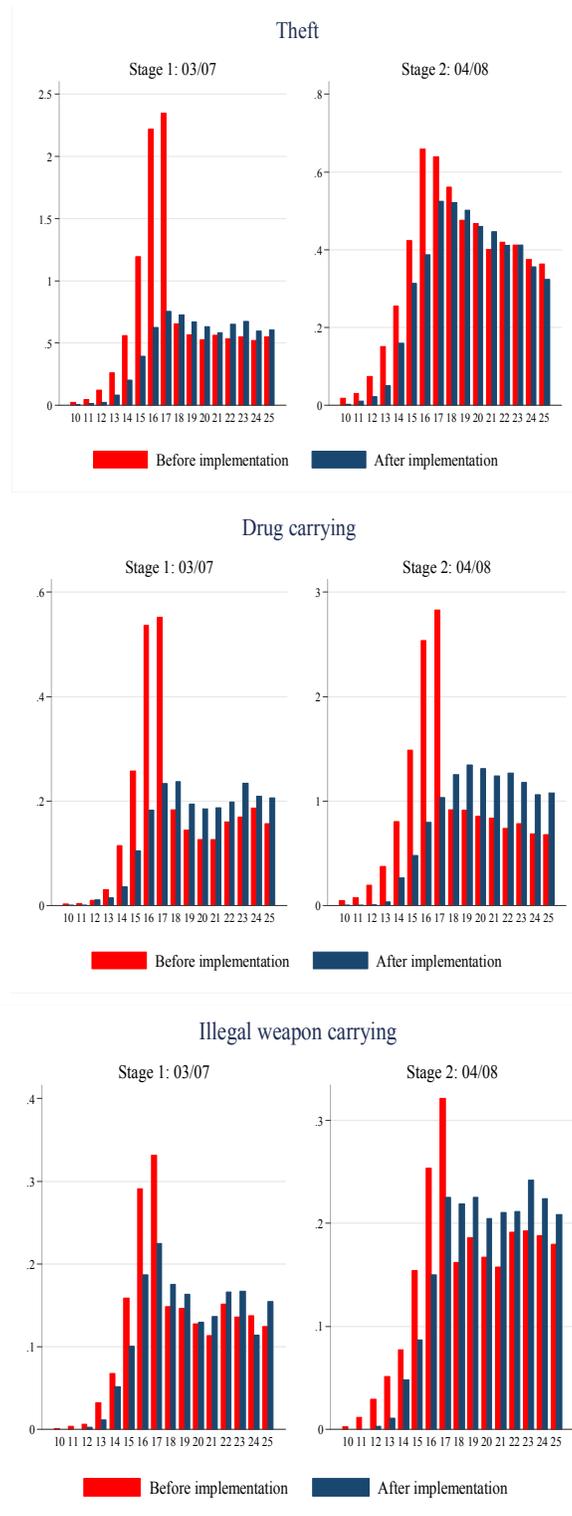
Source: Authors' calculations based on Ministry of Defense, Consejo Superior de la Judicatura and CEDE municipal panel

Table 4 confirms what is evident from Figure 4 by summarizing the main results obtained from estimating the impact of changes in the judicial system on police behavior from 25 different regressions. It presents the coefficient of interest (δ) obtained from regressing each capture rate per 100,000 inhabitants for each crime and cohort explained in the empirical strategy section on the SRPA implementation dummy. Although not shown, all regressions include controls for industry and trade revenue per capita, investment in education per capita, population density, percentage of rural population, and forcefully displaced population. We also included the lagged crime rates as well as municipality and month and year fixed effects[5].

Table 4. Dependent variable arrest rate for each cohort *c* and for each crime *s* in municipality *i* and time *t* (elasticities in standard deviations)

	Arrest Rates				
	Physical injuries	Total Theft	Weapon Carrying	Drug Carrying	Homicide
SRPA (cohort 8-11)	-0.047	0.0569	-0.0174	-0.152**	-0.0432
	[0.0472]	[0.0550]	[0.0672]	[0.0687]	[0.0304]
SRPA (cohort 12-13)	-0.0795**	-0.00870	-0.131*	-0.236*	-0.0148
	[0.0386]	[0.0561]	[0.0664]	[0.116]	[0.0323]
SRPA (cohort 14-17)	-0.0696	-0.206**	-0.106**	-0.321**	0.0718
	[0.0570]	[0.0770]	[0.0488]	[0.131]	[0.0453]
SRPA (cohort 18-24)	0.0579	0.0524	0.0456	0.0396	-0.0216
	[0.0361]	[0.0522]	[0.0334]	[0.0757]	[0.0336]
SRPA (cohort over 24)	0.0261	0.0361	-0.00920	0.101	-0.0321
	[0.0450]	[0.0555]	[0.0457]	[0.0760]	[0.0325]
Observations	2430	2430	2430	2430	2430
Number of municipalities	27	27	27	27	27
Controls	Yes	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes	Yes
Month*year FE	Yes	Yes	Yes	Yes	Yes

The table summarizes the main results from 25 different regressions accounting for the five age cohorts of interest and the arrest rates for five type of crimes. The independent variable of interest is the dummy variable indicating the month and year in which the SRPA was implemented in each municipality. Controls include: per capita Industry and Commerce tax collection, per capita investment in education, fiscal performance, density of population, rural index, displaced population arrival and lagged crime rates.

Robust clustered standard errors at the municipality level in brackets, *** p<0.01, ** p<0.05, * p<0.1.
Source: Authors' calculations based on Ministry of Defense and CEDE municipal panel

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[5] As mentioned in the empirical strategy we either excluded the crime rate in each municipality from the regressions on arrest rates or included different lag times in order to analyze whether any endogeneity problem may have been present that could bias the results. Although not shown, the results remain almost identical and are available upon request.

The gradual implementation of the SRPA significantly changed the arrest rates of underage individuals in the country. The impact varies according to the specific cohort and the type of crime analyzed. For example, the implementation of the SRPA decreased the arrest rates associated with drug carrying offenses for all children and adolescents in the country. The decrease is statistically significant and economically important amounting to 0.15, 0.24 and 0.32 standard deviations for youths between 8 and 11, 12 and 13, and 14 and 17 years of age respectively. Arrest rates for physical injuries only decreased for youths between 12 and 13 years of age by 0.08 standard deviations while theft arrest decreased for individuals between 14 and 17 years by 0.21 standard deviations. Arrest rates for illegal weapon carrying decreased for individuals between 12 and 13, and 14 and 17 by 0.13 and 0.11 standard deviations respectively. The coefficient estimates for adults between 18 and 24, and over 25 years are not statistically significant.

These results suggest that police officials modified their behavior in response to the adoption of the SRPA. Arrest rates for children and adolescents below 18 years of age dropped after the implementation of the SRPA, while remaining unaltered for criminal adults. The reduction in arrest rates for children and adolescents in all age brackets, and not only for those between 12 and 13 years of age, is explained by the uncertainty the new system brought for daily operations of police officials. Similarly to the findings in Shi (2009) and Prendergast (2001), police officials reduce crime fighting activities to avoid disciplinary sanctions from mishandling youth criminals.

Two additional results reinforce this interpretation. Firstly, for homicide arrest rates the coefficient of interest is never significant at any standard confidence level. This suggests that the gradual implementation of SRPA did not change any behavior that might have affected homicide arrest rates by the police force for any cohort. This result is expected given that the punishment of juveniles older than 14 for crimes related with homicide, extortion and kidnappings remained unchanged. Secondly, coefficients associated with other age cohorts are not significant either. This is an important result that highlights that the decreases in arrest rates for younger cohorts are not driven by a simultaneous decrease in police efficiency in these areas. Only the arrest rates of younger cohorts and only for those crimes whose punishment significantly reduced after the

implementation of SRPA took place decreased. Arrest rates for other age cohorts remain unaffected.

5.3 Do institutions learn?

The police force in Colombia understood that the significant changes introduced by the SRPA implied that the police force required special training. New arrest and investigation procedures for the special task force dedicated to deal with juvenile offenders and victims was in need. As such, special training workshops were carried out in the latter stages of the SRPA implementation for police officers dedicated to this special age profile. Such training could imply that the police force in districts that received the training in the latter phases could have learned how to work and implement the new system. Hence, the introduction of the SRPA in the later phases may not have brought the same impacts on the juvenile arrest rates across all judicial districts. In order to analyze this possibility, we estimate specification (2) for each of the five cohorts of interest and each of the five types of crimes, which identify the differential impact on arrest rates in each of the six judicial districts of the six phases of the SRPA implementation.

Table 5 summarizes the information obtained from 15 different regressions. As in previous tables the columns present the dependent variables of interest, the arrest rates for each type of crime. This table is further divided in three horizontal panels reporting in each one results using the arrest rates for the three age cohorts of interest impacted by SRP (8-11, 12-13 and 14-17 years of age). The results suggest that institutions do learn. Statistically significant and economically important impacts continue to be observed in almost the same crimes and age cohorts as in Table 4 but only for the first three stages of implementation of SRPA. In particular, arrest rates for almost all crimes decreased for the age cohort between 14 and 17 years of age, the most affected cohort by SRPA, in the first three judicial districts were the new system was implemented. Once the police designed a training program for the later phases, the apprehension of police officials to act when adolescents were committing crimes decreased. The econometric results show indeed no impact of the SRPA implementation for this same cohort in later stages. Even homicide arrest rates for under age individuals decrease in the first implementation stage for all cohorts of interest. No significant impact is found however on arrest rates of juveniles in the judicial

districts that implemented the SRPA later in time. This evidence could point to the fact that the police force did in fact learn though the workshops and their own experience[6].

Table 5. Dependent variable: Arrest rate for each cohort c and for each crime s in municipality i and time t (elasticities in standard deviations

| | | | Arrest Rates | | |
	Physical injuries	Total Theft	Weapon Carrying	Drug Carrying	Homicide
Panel A: Cohort 1 (8-11 years of age)					
SRPA*Stage1	-0.0264	0.00490	-0.0689	-0.0418	-0.115**
	[0.0205]	[0.0246]	[0.0484]	[0.0521]	[0.0463]
SRPA*Stage2	-0.0462	0.0208	-0.0805	-0.183***	-0.00836
	[0.0472]	[0.0363]	[0.0495]	[0.0632]	[0.0122]
SRPA*Stage3	-0.000871	0.0101	-0.00536	-0.00519	0.0130*
	[0.0128]	[0.0136]	[0.00700]	[0.0125]	[0.00703]
SRPA*Stage4	-0.0216	0.0113	0.0230	-0.120	-0.0220
	[0.0317]	[0.0304]	[0.0217]	[0.0863]	[0.0170]
SRPA*Stage5	-0.0163	0.0605	0.0487	-0.0299	-0.0130
	[0.0264]	[0.0371]	[0.0491]	[0.0183]	[0.0177]
SRPA*Stage6	-0.00592	-0.00592	0.00629	-0.00476	-0.000173
	[0.00794]	[0.00587]	[0.00515]	[0.00602]	[0.00240]
Panel B: Cohort 2 (12-13 years of age)					
SRPA*Stage1	-0.0491*	-0.0493	-0.160**	-0.0532	-0.0342**
	[0.0245]	[0.0331]	[0.0675]	[0.0547]	[0.0149]
SRPA*Stage2	-0.0868**	-0.0506	-0.169**	-0.249***	-0.0248
	[0.0402]	[0.0420]	[0.0687]	[0.0878]	[0.0340]
SRPA*Stage3	-0.0143	-0.0130	0.000671	0.00701	0.0121
	[0.0129]	[0.0196]	[0.00992]	[0.0198]	[0.00745]
SRPA*Stage4	-0.0470	-0.0243	-0.0536*	-0.247	0.0109
	[0.0297]	[0.0556]	[0.0310]	[0.191]	[0.00879]
SRPA*Stage5	-0.0124	0.0598*	0.00621	-0.0591	0.000554
	[0.0172]	[0.0306]	[0.0225]	[0.0398]	[0.0187]
SRPA*Stage6	-0.00584*	-0.0180*	-0.000695	-0.00966	-0.00175
	[0.00329]	[0.00946]	[0.00571]	[0.00657]	[0.00186]
Panel C: Cohort 3 (14-17 years of age)					
SRPA*Stage1	-0.0691*	-0.312***	-0.150***	-0.108**	-0.0708*
	[0.0341]	[0.0396]	[0.0520]	[0.0425]	[0.0372]
SRPA*Stage2	-0.137***	-0.203**	-0.137***	-0.277**	0.0734***
	[0.0450]	[0.0755]	[0.0422]	[0.106]	[0.0229]
SRPA*Stage3	-0.0205**	-0.0980***	-0.0344***	-0.0107	0.0208
	[0.00829]	[0.0187]	[0.0109]	[0.0168]	[0.0138]
SRPA*Stage4	-0.0301	-0.0418	0.00941	-0.237	0.0227*
	[0.0396]	[0.0588]	[0.0215]	[0.217]	[0.0126]
SRPA*Stage5	0.0357	-0.00109	0.00763	-0.136**	0.0178
	[0.0375]	[0.0330]	[0.0195]	[0.0531]	[0.0199]
SRPA*Stage6	0.0186	0.0216	-0.00700	-0.0290**	0.169
	[0.0465]	[0.0234]	[0.0129]	[0.0107]	[0.168]
Controls	Yes	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes	Yes
Month*year FE	Yes	Yes	Yes	Yes	Yes

The table summarizes the main results from 75 different regressions accounting for the six implmentation phases of the SRPA in Colombia, the arrest rates for five type of crimes and three specific age cohorts. The independent variable of interest is the dummy variable indicating the month and year in which the SRPA was implemented in each municipality. Controls include: per capita Industry and Commerce tax collection, per capita investment in education, fiscal performance, density of population, rural index, displaced population arrival and lagged crime rates.

Robust clustered standard errors at the municipality level in brackets, *** p<0.01, ** p<0.05, * p<0.1.
Source: Authors' calculations based on Ministry of Defense and CEDE municipal panel

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[6] These same regressions were estimated for the older two cohorts (18-25 and 25-older). Although not presented all coefficients were statistically equal to zero corroborating the evidence from Table 4 that the police arrest incentives for these other cohorts were not affected. Results are available upon request.

5.4. The impact on crime rates

Probably, one of the most dangerous consequences of such a change in police incentives is that crime rates committed by youth could have increased in Colombia after the implementation of the SRPA. This could have taken place given the direct reduction in the cost of committing crimes that youths now face due to the lenient punishments but also indirectly due to the change in police behavior described previously. The general perception of Colombian citizens reflected in numerous articles in the media suggest that, despite the decrease in crime rates observed for the country during those years, juvenile crime did in fact significantly increase[7].

We tested this hypothesis by regressing monthly crime rates at the municipality level against the SRPA dummy variable indicating the exact month when implementation took place. To identify any differential effect between juvenile and adult crime rates, we interacted this dummy with the proportion of population in each municipality between three cohorts: youths between 8 and 13, those between 14 and 17 and those between 18 and 25.

Table 6 reports the results. As can be observed, crime rates in Colombia actually decreased after the implementation of the SRPA. This decrease however was smaller in municipalities were there was a larger population of youths under 14 years of age and between 18 and 25. This is true for crimes associated with theft to people, commerce, residence and vehicles. Interestingly however, when analyzing homicide rates, there is absolutely no evidence that the SRPA implementation impacted the incidence of such crime in the country. Such differences could stem from the fact that the SRPA did not significantly change the punishments or the incentives of the police force surrounding this specific crime. These results also reinforce our hypothesis: the reduction in arrest rates is not caused by a lower participation of adolescents but by a change in police behavior.

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[7] Some reports in the newspaper are *No es un juego de niños,* in *El Espectador.* http://www.elespectador.com/impreso/investigacion/articuloimpreso-no-un-juego-de-ninos; *En lo corrido del año van 18.559 adolescentes en conflicto con la ley,* in *El Tiempo; Preocupa aumento de menores vinculados a actividades delictivas en Cali*, in *El Pais. http://www.elpais.com.co/elpais/judicial/noticias/preocupa-aumento-menores-edad-vinculados-actividades-delictivas-cali* http://www.eltiempo.com/archivo/documento/CMS-13062815. Retrieved on 13th of December of 2016.

Table 6. Dependent Variable: Crime Rate _s_ in municipality _i_ and time _t_ in capital cities (elasticities in standard deviations)

Variables	Theft to people	Theft to commerce	Theft to residence	Theft to vehicles	Homicides
Panel A					
SRPA	0.0288	0.0414	0.0716	-0.00329	-0.0411
	[0.0602]	[0.0678]	[0.0623]	[0.0522]	[0.0296]
Panel B					
SRPA	-1.389***	-1.038**	-0.696*	-1.128**	-0.157
	[0.436]	[0.437]	[0.362]	[0.487]	[0.563]
SRPA*Log (% of people 8-13)	1.203***	0.151	0.451*	0.734***	-0.407
	[0.432]	[0.280]	[0.262]	[0.252]	[0.459]
SRPA*Log (% of people 14-17)	-1.000	-0.102	-0.682	-0.518	0.845
	[0.609]	[0.464]	[0.445]	[0.586]	[0.604]
SRPA*Log (% of people 18-25)	1.210*	1.030***	1.001***	0.905*	-0.328
	[0.593]	[0.351]	[0.350]	[0.442]	[0.395]
Observations	2592	2592	2592	2592	2592
R-squared	0.168	0.306	0.118	0.104	0.146
Number of municipalities	27	27	27	27	27
Controls	Yes	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes	Yes
Month*year FE	Yes	Yes	Yes	Yes	Yes

Controls: per capita Industry and Commerce tax collection, per capita investment in education, fiscal performance, density of population, percentage of rural popuuation and number of displaced persons.

Robust Standard errors in brackets, *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Source: Authors' calculations based on Ministry of Defense and CEDE municipal panel

5.5 Robustness checks

The richness of the data allows us to carry out two robustness checks to confirm that the negative and significant effect found in previous tables are causal and not merely a result of the data or the specifications chosen. In the first robustness check we estimate specification (1) but assume that the implementation of the SRPA took place four years before it actually did. We estimate the impact of this false SRPA implementation assuming it occurred in the exact same phases it actually did but instead of having March 2007 as the starting year we assumed it started in March 2003. The second robustness check takes advantage of the numerous and exogenous changes in the date of actual implementation of the SRPA across phases. In this second placebo test we again run specification (1) but instead of constructing the SRPA dummy using the actual implementation dates we assign the dates that were originally established in Decree 4652, the

first implementation decree established by central mandate[8]. As reviewed in section II these dates changed three times in the subsequent years and hence give us ample opportunity to carry out such second placebo.

Table 7 summarizes the main results of the 50 placebo regressions following the same order as the previous tables. Panel A summarizes the main results of the placebo that assumes implementation took place four years before it actually did, while Panel B summarizes results assuming implementation occurred following the original implementation phases. As can be observed, in none of the placebo tests are our coefficients of interest significant suggesting that indeed the reductions observed are the causal effect of changes in the judicial system on police incentives and ultimate behavior.

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[8] In this decree only five phases were established. We maintained the six phases of the last decree for the specifications shown bur results hold with the original five phases too.

Table 7. Dependent Variable: Arrest Rate for each cohort *c* and for each crime *s* in municipality *i* and time *t* (elasticities in standard deviations)

Variables	Physical injuries	Total Theft	Weapon Carrying	Drug Carrying	Homicide
Panel A: Placebo 1 - Data from 2003 to 2006 and asuming implementation ocurred for years before.					
SRPA (cohort 8-11)	0.152**	-0.0561	0.0186	0.0209	0.0645
	[0.0679]	[0.0642]	[0.0436]	[0.0407]	[0.0470]
SRPA (cohort 12-13)	-0.0513	0.0113	-0.0328	0.0635	-0.00542
	[0.0480]	[0.0643]	[0.0635]	[0.0569]	[0.0409]
SRPA (cohort 14-17)	-0.00345	0.0719	0.0190	0.0763	0.0378
	[0.0581]	[0.0805]	[0.0354]	[0.0559]	[0.0563]
SRPA (cohort 18-24)	-0.0303	0.196**	0.0307	0.170***	0.0475
	[0.0662]	[0.0813]	[0.0445]	[0.0470]	[0.0344]
SRPA (cohort over 24)	-0.0444	0.176**	0.0510	0.163**	0.0401
	[0.0769]	[0.0673]	[0.0548]	[0.0688]	[0.0539]
Observations	1176	1176	1176	1176	1176
Number of municipalities	28	28	28	28	28
Panel B: Placebo 2 - Data from 2003 to 2010 taking implementation phases from the first decree.					
SRPA (cohort 8-11)	0.0189	0.0227	-0.0659	-0.0339	-0.0541
	[0.0450]	[0.0398]	[0.0405]	[0.0900]	[0.0337]
SRPA (cohort 12-13)	-0.147	-0.0346	-0.118*	0.0341	-0.0340
	[0.111]	[0.0471]	[0.0652]	[0.165]	[0.0322]
SRPA (cohort 14-17)	-0.195	-0.104	-0.0975	0.00280	-0.0542
	[0.116]	[0.108]	[0.0658]	[0.196]	[0.0451]
SRPA (cohort 18-24)	-0.0651	-0.0582	0.00810	0.0180	-0.0606
	[0.0758]	[0.0765]	[0.0394]	[0.0630]	[0.0362]
SRPA (cohort over 24)	-0.115	-0.0395	0.0639	0.0703	-0.0191
	[0.0736]	[0.0513]	[0.0476]	[0.0731]	[0.0479]
Observations	2430	2430	2430	2430	2430
Number of municipalities	27	27	27	27	27
Controls for both panels	Yes	Yes	Yes	Yes	Yes
Municipality FE for both panels	Yes	Yes	Yes	Yes	Yes
Month*year FE for both panels	Yes	Yes	Yes	Yes	Yes

The table summarizes the main results from 50 different regressions accounting for the four age cohorts of interest and the arrest rates for five type of crimes. The independent variable of interest for panel A is a dummy variable indicating the month and year in which the SRPA was implemented in each municipality but assuming it occured four years before its actual implmentation. The independent variable of interest for panel B is a dummy variable indicating the month and year in which the SRPA would have been implmented assuming the implmentation dates in the first decree and hence before all changes in actual timming of the implmentation took place. Controls for both panels include: per capita Industry and Commerce tax collection, per capita investment in education, fiscal performance, density of population, percentage of rural population, number of displaced persons and lagged crime rates.

Robust clustered standard errors at the municipality level in brackets, *** p<0.01, ** p<0.05, * p<0.1.

Source: Authors' calculations based on Ministry of Defense and CEDE municipal panel

6. Qualitative Evidence: Contextualization of Perceived Changes in Police Behavior and Juvenile Criminal Activity in the Streets

After a two-cycle qualitative coding process, the following issues appreared most frequently in the data set. Firstly, all participants expressed that overall they perceive a considerable increase in juvenile criminal activities in the streets at the national scale. Participants across the three focus groups attribute this increase to adult criminals who use adolescents in order to commit their crimes:

> "… adult criminal organizations use minors to commit their crimes because they know that, depending on the crime, they will only spend one night here and the next day they will be let free … (*las bandas de adultos para ellos realizar sus hechos delictivos utilizan los menores porque saben que dependiendo del delito pueden pasar solamente una noche acá y al otro día pues le dan su libertad*)…" (Focus Group - Tunja, February 16, 2014).

Aligned with the previous perception, an official describes how,

> "… the difference cannot be contextualized through statistics but rather by understanding social behavior … we observe an increase in these types of crimes because the sentences are shorter … an adult arrives and socializes with an adolescent and convinces him to commit this type of crime because adolescents have many more benefits in terms of sentencing (*la diferencia del código a la ley no tipifica en la estadística, más bien de pronto la conducta social que enfrenta el país. Esto si, se ve que este tipo de delitos se han incrementado por los jóvenes. ¿Por qué? Por debido a las sanciones que son más cortas. Porque ya un adulto, un adulto, como que llega y se relaciona con un adolescente y lo convence a cometer este tipo de conducta, ¿por qué? Porque tiene más beneficios en el momento de las sanciones*)" (Focus Group - Bogotá, February 20, 2014).

Participants also expressed frustration in terms of the special protection status of adolescents and proclaim that :

> "… a minor of 14 years old is practically unprosecutable and therefore minors take advantage of this … at 12, 13 years old they are committing murder … because they are no longer held responsible … (*Un menor de 14, prácticamente es como si fuera inimputable y entonces ya el menor va a aprovechar eso y ellos ya, o sea un menor de por decir 12, 13 años muchas veces ya está cometiendo delitos como homicidio, como, entonces ya no va a, ya no tiene esa responsabilidad*" (Focus Group - Bogotá, February 20, 2014).

Furthermore, the officials describe their observation of a cultural shift in which adolescents assume less responsibility for their actions:

> "… the youth see it this way … they have a code that favors them but they don't understand that they have obligations … when we proceed in any way, he says that 'I'm underage and I have particular rights and protection' … they believe that no one can do anything to them … they use physical aggression … becoming aggressive with one of the officers … in hopes of receiving a reaction … (*el joven, el joven lo ve de esta forma. Que tiene un código a su favor, pero no entiende es que tiene unas obligaciones, las cuales las tiene que cumplir. Entonces cuando se procede en cualquier forma, él dice es que soy menor, es que soy menor, y tengo un trato especial. Ellos creen que por eso tienen el trato especial del Estado y que nadie puede hacer absolutamente nada y por esa razón cuando nosotros procedemos con cualquier adolescente, cualquier edad siempre se va a presentar esto. Agresiones físicas y tal cosas, por qué razón, el joven va intentar agredir al compañero, intenta agredirlo y él va a esperar que el compañero reaccione*)" (Focus Group - Bogotá, February 20, 2014).

Within the interdisciplinary literature on children's rights and children's citizenship(s), "…children are often uncritically considered as pre-adults or 'human becomings'" (Valentine 1996 in Panelli et. al. 2007: 3; Skelton and Valentine 1998). In contrast, as noted the previous data excerpt, officials call for a process that catalyzes the agency of young people within the judicial system and denounce the lack of a sense of responsibility and intentional manipulation of the system:

> "… 14 years old and younger is a nightmare … and unfortunately, what happens before the judges … a 10 year old arrives and says: he beat me, he mistreated me … therefore the judge says: he's a child, I'm going to believe the child, why would he lie to me? But the judge doesn't realize that psychologically he is a person that is manipulating the system… they know they system … (*…de los 14 años para abajo se convierte ahorita en el terror. Y entonces desafortunadamente, es lo que pasa ante los juzgados, llega un joven de 10 años con un compañero de aproximadamente unos 35 años en la institución y llega el joven y dice: es que él me golpeó, el me maltrató, él hizo tal cosa. Entonces el juez va a ver al joven y va a decir: es un niño, le voy a creer al niño, ¿él por qué me va a mentir? Pero no sabe que psicológicamente es una persona que está manipulando el sistema. Y que conocen el sistema)*" (Focus Group - Bogotá, February 20, 2014).

Given the above-mentioned perceptions that contextualize changes in police behavior and the decrease in the arrest rate, in addition to the need for specialized training and protocols that guide the behavior of police officer within a rights-based framework, it is also necessary to support

youth citizenship and empowerment processes within the neighborhoods and areas where youth crime is concentrated.

7. Conclusions

This paper studies the impact of changes in a judicial system to judge youth crime on police behaviour. We use a natural experiment in Colombia that increased the age of imprisonment of juvenile offenders, decreased the severity of judicial punishment imposed on adolescents, and modified the rules and procedures for handling youth crime. The new judicial system created incentives for adolescents to participate in criminal activities as well as for police officials to change behaviour to avoid potential disciplinary sanctions. We find that arrest rates for adolescents between 12 and 13, and 14 and 17 years of age decreased when the police adopted the new system, while leaving unaltered arrest rates of criminal adults. The reduction in arrest rates, which are statistically and economically significant, concentrates in the age brackets and types of crimes for which penal sanctions decreased. Therefore, the drop in arrest rates is not the result of overall inefficiency of the police forces but of changes in police behaviour for handling youth crime. Shi (2009) and Prendergast (2001) find similar evidence of police officials strategically decreasing arrest rates after the implementation of external oversight programs. We perform two placebo tests which show that the negative and significant impact of the SRPA on arrest rates is causal and not the result of the data or the specification chosen.

In spite of the initial poor performance of the SRPA, the police forces learned to adjust their operations to abide by the new regulations. The training programs implemented by the police forces after the first phases of the SRPA were effective to countervail the dropping arrest rates. Our findings show that the negative impact of the SRPA on arrest rates for adolescents between 14 and 17 years of rates disappears for later stages. Institutions thus learn and are able to endogenously spur process of change to adjust in a changing environment. In evaluating a police reform in Rajasthan, Banerjee et al (2012) identify a significant impact of training programs to improve the public perception of police effectiveness.

Our paper provides evidence on the importance of preventing the potential negative impacts when legislation changes are adopted. The results for crime rates suggest the SRPA caused an increase in crime incidents in cities with a larger proportion of adolescents. The need to protect the rights of youth, rehabilitate juvenile offenders and prevent later recidivism is a potential benefit of the restorative justice system adopted in Colombia. While this benefit materializes, the state should have designed parallel policies to mitigate the negative externalities, and prevent changes in police behaviour.

The qualitative analysis suggests the lack of coordination between the police forces and the judicial system also contributed on the reduction in arrest rates. Police officials perceived their effort to apprehend criminal youths was halted by the lack of knowledge of the new system by prosecutors and judges. Besides understanding potential negative externalities, the state should add financial resources for training programs, and hiring civil servants knowledgeable of the new judicial system. Additionally, the transition to the new system has instilled fear within the police force of committing a violation of the SRPA, which implies violating the rights of a constitutionally protected and vulnerable group of citizens.

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