

# The Evolution of Citizen Security in Colombia in Times of COVID-19

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## **Abstract\***

This technical note examines the impact of the COVID-19 pandemic on crime and law enforcement dynamics in Colombia. The analysis uses administrative data on police reports and arrests for different types of offenses. It applies a “difference-in-differences” model, comparing the number of reports and arrests during the quarantine against their pre-quarantine trend. The results show a marked decline in homicides, motor vehicle theft, and other theft types in the initial weeks of the quarantine. The strong initial declines attenuated over time. The results reveal differences in crime dynamics between different regions of the country. The analysis also shows how COVID-19 modified police activity: arrests for offenses such as homicide and robbery decreased, and arrests due to threats to public health increased. This article contributes to a growing number of studies on the pandemic’s social impact and provides data and tools to inform citizen security and criminal justice policies.

JEL Codes: J18, K42

Keywords: public safety, crime, Colombia, COVID-19, quarantine, police action

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## Executive Summary

This document presents the initial results of a collaboration between the Colombian National Police (Policía Nacional de Colombia, PNC), the Inter-American Development Bank (IDB), and EAFIT University (Universidad EAFIT) to generate analyses and evidence on citizen security in Colombia. The collaboration began with an analysis of citizen security trends in Colombia in the context of the COVID-19 pandemic. This study describes the changes in the dynamics of certain criminal offenses and police actions following the adoption of the quarantine and other mobility restrictions. Its two main objectives are to (i) improve the understanding of the impact of health emergencies on criminal dynamics and (ii) bring forward evidence to inform citizen security policy decisions, particularly the design of law enforcement strategies during the pandemic. The analysis compares the number of police reports registered by the PNC for different types of offenses during the mobility restriction period (starting March 20, 2020) against what would have occurred had the offenses followed pre-quarantine trends, adjusting for seasonal variations. To this end, we use data on crime reports and PNC operations throughout Colombia from January 1, 2019, to August 17, 2020.<sup>1</sup> The main findings are:

- There is no evidence of a significant increase in crime relative to pre-quarantine trends for the period analyzed and the set of offenses considered.
- In the quarantine's initial weeks, most of the offenses examined fell considerably compared to their pre-quarantine trends. The fall attenuated after this initial period, and some crimes have already returned to their pre-quarantine trends.
- From March 20 to August 17, 2020, the homicide's daily rate fell 16 percent on average relative to its pre-quarantine trend.
- This drop in the average number of homicides was primarily due to what occurred during the first month and a half of the mobility restriction period. During those weeks, there were around 40 percent fewer homicides committed compared to the pre-quarantine trend. Beginning in June, the number of homicides seemed to have returned to the pre-quarantine trend.
- The reduction in homicides differed by geographical area and the victims' gender. The decrease was greater, in absolute terms, in urban areas than in rural ones, and for male homicides than for female homicides.
- Homicide dynamics during the mobility restriction period were not homogeneous across Colombian regions. The regions where the reductions were greatest relative to pre-quarantine trends were Eje Cafetero (-31 percent) and Caribe (-14 percent). The rest of the regions did not register significant declines. There were no significant drops in homicides in the municipalities included in the National Comprehensive Program for the Substitution of Illegal Crops (Programa Nacional Integral de Sustitución de Cultivos Ilícitos, or PNIS).

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<sup>1</sup> The end date of the analysis is August 27, 2020, due to information availability on complaints registered by the PNC. The quarantine and other mobility restrictions did not end on that date. Colombia announced mandatory preventive social confinement on March 20, 2020, and the execution of the decree commenced three days later. The first phase of social confinement was extended until April 26. The second phase lasted from April 27 to August 31, 2020, when a phase of selective isolation began. The Colombian government provides information on these stages at <https://coronaviruscolombia.gov.co/Covid19/acciones/acciones-de-aislamiento-preventivo.html>.

- From March 20 to August 17, 2020, the daily number of motor vehicle thefts (a benchmark for crimes against private property) showed an average reduction of 45 percent against its pre-quarantine trends. This decrease was generalized throughout the country.
- The COVID-19 pandemic and its associated measures led to changes in law enforcement operations. Arrests linked to the enforcement of health emergency regulations increased significantly.
- There are various explanations for the changes and deviations in the dynamics of some criminal phenomena and police operational results, ranging from the changes in social dynamics to the police and other authorities' strategies during the health emergency.
- The patterns observed during these months in Colombia suggest certain domains in which the police, the regional and local governments, and the criminal justice system should focus their actions and strengthening efforts.
- Likewise, this exercise—a first in Latin America—can be a helpful reference for other countries in the region to adopt similar lines of action:
  - a. Targeting preventive actions, investigation, operations, and procedures that address the specific needs of the different regions and types of geographic areas.
  - b. Optimizing law enforcement resources' use to balance the needs to maintain public safety and ensure compliance with health emergency regulations. This optimization requires regular monitoring of how police actions change due to the crisis and how these changes affect citizens' perception of and trust in police services.
  - c. Identifying and interrupting criminal value chains disrupted during the health emergency.
  - d. Strengthening law enforcement and criminal justice agencies' data analysis capacity. This enhancement would facilitate the interaction between the systems of these agencies and the regional and local governments.

This work contributes to various strands of literature on economics and other related disciplines. First, it contributes to the literature on the relationship between health emergencies (such as that associated with COVID-19) and citizen security and violence (Alvarado, Sutton, and Laborda, 2020; Bullinger, Carr, and Packham, 2020; Hodgkinson and Andresen, 2020; Mohler et al., 2020; Pérez-Vincent et al., 2020; Ravindran and Shah, 2020; Rosenfeld and López, 2020). Second, and more generally, this work contributes to the growing body of research on the effects of COVID-19 and prior pandemics on social and economic outcomes such as poverty and inequality (Bitler, Hoynes, and Schanzenbach, 2020; Fuchs-Schündeln et al., 2020; Han, Meyer, and Sullivan, 2020; Van Lancker and Parolin, 2020; Wright et al., 2020).

## 1. Data: Crime Statistics and Sociodemographic Data

Following the announcement of the COVID-19 pandemic, the Colombian government imposed several measures to contain the spread of the virus. On March 20, 2020, the national government announced a mandatory preventive scheme of isolation that would enter into effect nationwide starting on March 25, 2020. The mandatory preventive lockdown included the suspension of domestic flights, limits on public passenger transportation, suspension of inter-municipal and municipal land transportation (except for movement necessary for the health sector to function,

the supply of essential products, and the continuity of medical treatments). The first phase of social isolation was extended to April 26. After this date, other economic sectors began to reopen progressively, applying biosafety protocols. A selective isolation phase began on August 31, 2020, with differences across municipalities depending on the degree to which they had been affected.

### Criminal Statistics System

Colombia's crime levels have been relatively stable in the last five years. In this period, the homicide rate has been close to the lowest levels ever recorded, considerably below the prior decades. In the 1990s, the annual homicide rate averaged 71.7 per 100,000 inhabitants. In the 2000s, it declined to 50.56 and fell further during the following decade until reaching 29.58. In 2019, the homicide rate was 25.62.

The primary source of data for the analysis presented herein is the Criminal Statistics System (Sistema Estadístico Delincuencial, or SIEDCO) of the Colombian National Police. SIEDCO generates geo-referenced information on all crime reports and police operational outcomes recorded in Colombia (1,122 municipalities). This study used the SIEDCO data from January 1, 2019, to August 17, 2020. While data availability determined the study's cut-off date, the isolation measures continued even after August 17.

- **Primary Offenses:** Two types of criminal offenses constitute the core of this analysis: homicides and motor vehicle theft. These two offenses have specific characteristics that render them of particular interest for analyzing the dynamics of criminality in the context of the pandemic.

First, homicide is the crime with the highest cost for society and is strongly associated with other crimes against physical integrity, such as battery. Vehicle theft is a crime against private property with a relatively high social cost and highly correlated with other offenses against property (such as theft, larceny, and robbery).

Second, the high reporting rate of these crimes makes it possible to analyze changes in criminal dynamics with more precision. The pandemic and mobility restrictions may have affected the occurrence of crimes and the possibility of lodging the appropriate complaint. These simultaneous changes make it challenging to interpret variations in reported crimes; the changes observed in the number of reports can combine variations in criminal dynamics and changes in the reporting rates. In the case of homicides, the attention typically given to these incidents and the mechanisms that institutions have for recording and verifying violent deaths facilitate the interpretation of the results. In automobile theft, the incentives to report such incidents to collect on the insurance also reduce this potential difficulty, without eliminating it completely.

- **Operational Results:** The analysis of operational results centered on the figures for four categories of arrests: homicidal violence (murders, injuries, or weapons trafficking); public health (associated with compliance with health emergency rules); larceny; and other arrests (possession, production, and trafficking of narcotic substances, among other offenses).
- **Other Crimes:** The secondary analysis of criminal dynamics considered reports of battery and other categories of theft (larceny, commercial, or household burglary). In these crimes, the reporting rate is structurally low, and the pandemic and mobility restrictions may have impacted their reporting rate. For this reason, this study presents the results for these offenses more cautiously and understands that the variations observed during the period

under analysis probably combine both changes in the levels of criminality and in the propensity to report crimes.

### **Sociodemographic Data**

This analysis used information from the National Planning Department (Departamento Nacional de Planeación, or DNP) and the National Administrative Department of Statistics (Departamento Administrativo Nacional de Estadísticas, or DANE) to characterize and classify the municipalities of Colombia. The effects of the pandemic in urban and rural areas are studied separately. The analysis also distinguishes between regions of the country; municipalities that are part of the Territorially Focused Development Program (Programa de Desarrollo con Enfoque Territorial, or PDET) or the National Comprehensive Program for the Substitution of Illegal Crops (PNIS); and municipalities with different poverty levels, as measures by DANE's Multidimensional Poverty Index (MPI).<sup>2</sup>

Annex A presents some descriptive statistics of crime reports and socioeconomic characteristics for all Colombian municipalities and each of the subsamples analyzed.

### **Mobility Data**

Information from Google Mobility enables the characterization of the moment when social confinement measures were adopted.<sup>3</sup> These data show that mobility in the country was noticeably reduced starting on March 20, 2020, when the mandatory preventive lockdown was announced. The analysis considers this date as the beginning of the quarantine period, even though the government enacted the official measures of social confinement some days later (March 25). In terms of social dynamics, the impact of the pandemic began to be felt upon people's adoption of isolation measures. In our analysis, the terms "pandemic," "quarantine," and "health emergency" are often used interchangeably. The analysis does not distinguish between these events, which began practically simultaneously.

### **Unanalyzed Criminal Offenses**

The analysis excludes offenses such as extortion and domestic violence due to the difficulty of measuring them with the available data sources (i.e., administrative complaints). The number of reports of extortion is historically low relative to the incidence of this crime. Cities such as Medellín record between 400 and 500 complaints each year. However, victimization surveys conducted by the Office of the Mayor of Medellín suggest that the victimization rate for this crime ranges from 5 to 10 percent.

The rate of domestic violence complaints is also relatively low, and there are clear reasons why the quarantine may have reduced these reports even further. The fact that victims and perpetrators are confined in the same space directly affects the victims' possibilities of lodging a complaint. These possible changes in reporting rates could lead to declines in the number of complaints, despite an increase in incidents. This possibility renders interpreting the results more difficult, possibly leading to erroneous conclusions.

Even if these offenses are not part of this study, the importance of attempting to analyze the evolution of these crimes should be emphasized. Such efforts will require combining the data on

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<sup>2</sup> The study used the information from DANE available at <https://www.dane.gov.co/index.php/estadisticas-por-tema/pobreza-y-condiciones-de-vida/pobreza-y-desigualdad/medida-de-pobreza-multidimensional-de-fuente-censal>.

<sup>3</sup> The study used Google's mobility information available at [https://www.gstatic.com/covid19/mobility/Global\\_Mobility\\_Report.csv?cachebust=722f3143b586a83f](https://www.gstatic.com/covid19/mobility/Global_Mobility_Report.csv?cachebust=722f3143b586a83f).



complaints with information from other sources that can provide a more comprehensive perspective on these problems.

## 2. Methodology

This document aims to understand how the COVID-19 pandemic and the subsequent measures have affected certain indicators of citizen security in Colombia. Such an understanding requires comparing what has occurred during the health emergency and what would have happened in Colombia without the pandemic.

### Average Impact of the Pandemic

What would have happened in the absence of COVID-19 cannot be precisely known; thus, an approximation of a counterfactual scenario is necessary. The analysis relies on a difference-in-differences model, which constructs a counterfactual scenario using data on the changes in crime observed during the same period in 2019. In other words, the assumption is that if the pandemic had not struck, crime would have followed the same seasonal evolution as that of the preceding year. The estimated impact of the health emergency is obtained by comparing what actually happened against this counterfactual scenario.

Table 1 illustrates the method in a simplified fashion using data on homicides. The columns indicate the daily average of homicides from January 1 to March 19 and March 20 to August 17. The rows show the data for 2019 and 2020, respectively. The difference between columns 2 and 1, reported in column 3, is the difference in the trends before and after the health emergency (i.e., the seasonal variation). The difference between the rows for 2019 and 2020, reported in the last row, is the difference between the two years. The “difference-in-differences” estimator, reported in the third row of the last column, is given by the difference between the two differences (hence the name).

This estimator can also be obtained by comparing what effectively occurred during the quarantine (28.8 homicides per day) to the counterfactual scenario obtained by adding the seasonal variation for 2019 (+0.1) to what was observed in the first months of 2020 (33.3). The estimator calculates the impact of the quarantine under the assumption that in its absence the number of homicides would have risen as it did in 2019.

**Table 1. Example of the Calculation of Difference in Differences for Homicides (without Considering Seasonality Associated with Days of the Week and Weeks of the Year)**

	January 1–March 19	Mar. 20–August 17	Difference
	(1)	(2)	(3)
2019	34.1	34.2	0.1
2020	33.3	28.8	-4.5
Difference:	-0.8	-5.4	-4.6

In formal terms, we estimate the pandemic’s impact by applying the following model, which considers the seasonality associated with weeks of the year and days of the week.

$$y_{itrdsy} = \beta D_{it} + \alpha_r + \gamma_d + \mu_s + \delta_y + \varepsilon_{itrdsy} \quad (1)$$

Subscripts correspond to municipality ( $i$ ), day ( $t$ ), department ( $r$ ), day of the week ( $d$ ), week of the year ( $s$ ), and year ( $y$ ). The outcome variable  $y$  corresponds to the number of events registered per day in each municipality (for each type of offense or operational result). The quarantine variable is  $D_{it}$ , and takes on the value 1 when municipality  $i$  is under the quarantine measures on day  $t$ . In addition,  $\alpha_r$  corresponds to department fixed effects,  $\gamma_d$  to day-of-the-week fixed effects,  $\mu_s$  week-of-the-year fixed effects, and  $\delta_y$  to year fixed effects (which together capture seasonal variations in crime).<sup>4</sup> Finally,  $\varepsilon_{itrdy}$  is an error term. The coefficient of interest is  $\beta$ , which identifies the average change in the outcome variable's trend after the start of the health emergency.<sup>5</sup>

### The Pandemic's Dynamic Impact

As a complement, the report also considers the following “event study” model that separately considers the impact for each fortnight during the quarantine period:

$$y_{itrdy} = \sum_{k=-T}^{-2} \beta_k D_{it}^k + \sum_{k=0}^R \beta_k D_{it}^k + \alpha_r + \gamma_d + \mu_s + \delta_y + \varepsilon_{itrdy} \quad (2)$$

where the sole change relative to equation (1) is the change of  $D_{it}$  to a set of dummies  $D_{it}^k$  taking value 1 for the different fortnights in year 2020. In this specification, the coefficients  $\beta_k$  for values of  $k$  between 1 and  $R$  identify the effect of the health emergency on the result variables in each two-week interval  $k$  after the start of the restrictions (relative to the two weeks prior to the start of the emergency).

The estimation of this model serves two objectives. First, it analyzes whether, during the period prior to the health emergency, the trends in crime and operational results were parallel to the observed in 2019. The coefficients  $\beta_k$  for the fortnights prior to the quarantine (values of  $k$  between  $-T$  and  $-2$ ) make it possible to verify whether the evolution prior to the health emergency was similar to the evolution in 2019—that is, whether trends in 2019 and 2020 were parallel. The absence of systematic differences in the evolution of the indicators in the pre-pandemic period helps validate the identification assumption behind the “difference-in-differences” strategy. Secondly, the estimation of the dynamic model makes it possible to study whether the effects on crime changed as the health emergency evolved.

This methodology is frequently employed in economics to identify causal effects in non-experimental settings (see, for example, Panda, 2020; Almond, Li, and Zhang, 2019; Dobkin et al., 2018; Lafortune, Rothstein, and Schanzenbach, 2018; Lutz, 2011).

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<sup>4</sup> In an alternative specification, we substitute department fixed effects with municipality fixed effects. The results using this alternative model show no changes, either in magnitude or in statistical precision or significance.

<sup>5</sup> As indicated in the preceding section, the quarantine, the pandemic, and the health emergency began practically simultaneously in Colombia. Based on the above assumption, the model identifies the aggregate impact of this set of events. This analysis does not allow us to separately identify the impact of each one. All of the dependent variables examined in this study are discrete, non-negative variables that indicate the number of occurrences of an event (i.e., counting variables). Annex C includes the results of the Poisson Regression Model estimate, used with count variables. The model assumes that, given the values of the explicative variables, the dependent variable ( $y_{itrdy}$ ) follows a Poisson distribution with a mean equal to  $\exp(\beta D_{it} + \alpha_r + \gamma_d + \mu_s + \delta_y)$ . The results of the estimates from the two models used in the study (linear and Poisson) yield similar results, both in terms of magnitude and statistical significance. The Poisson Model does not estimate the impact of public health on rates of detention, since the variable takes on the value of 0 (no occurrence) for many days and municipalities during the pre-pandemic period.

### 3. Results

This section presents an analysis of the evolution of certain offenses and police actions in Colombia during the pandemic. It is divided into four parts. The first one considers all municipalities of Colombia. The second one looks at the different geographical regions separately. The third part groups municipalities according to poverty quartiles. The fourth part focuses on municipalities that participate in the Territorially Focused Development Program (PDET) and the National Comprehensive Program for the Substitution of Illegal Crops (PNIS).

#### All Colombian Municipalities

Table 2 shows the estimates of the difference-in-differences model for the complete sample of 1,122 municipalities. Column 1 reports the results obtained using all crimes and arrests that occurred in these municipalities. Columns 2 and 3 report results using information solely on crimes and arrests in rural or urban areas. Columns 4 and 5 consider results using the information on offenses and arrests in which the victim or the detained individual was a man or a woman, respectively. Each data triad corresponds to the results of a different estimation. The first datum is the estimate of coefficient  $\beta$  of Model 1; the second datum is the estimate's standard error, and the third datum is the magnitude of the coefficient relative to the average number of events that occurred between January 1, 2019, and March 19, 2020 (reported as a percentage).

Panel A reports the results for the two primary offenses: homicide and vehicle theft. The average number of cases per day fell for both. The coefficients are negative and statistically significant in all the cases, whether they occurred in rural or urban areas with male or female victims. The average drop in daily homicides was 15.5 percent and 44.8 percent for vehicle theft (relative to the average from January 1, 2019, to March 19, 2020). In absolute terms, the reduction in homicides and vehicle thefts was larger in urban areas than in rural areas, and larger for male victims than for female victims (the difference between both coefficients is statistically significant).<sup>6</sup>

Panel B reports the results of the estimation of the difference-in-differences model for different types of arrests. Using the information on all arrests, we find a statistically significant decrease in arrests associated with homicidal violence, theft, and other crimes (such as drug manufacturing, possession, and trafficking) of 44–60 percent relative to the daily averages for the period before the quarantine. This result aligns with the changes observed in reported crimes. The arrests associated with public health (including arrests related to non-observance of the health emergency rules) rose markedly. The results are statistically significant and represent a large change relative to before the pandemic, when the number of arrests for these offenses was extremely low. The results show similar direction and precision when separately considering arrests in rural and urban zones or arrests of men and women. These data indicate a change in the PNC activities, which migrated from focusing on offenses associated with homicidal violence or theft toward controlling the mandated regulations for the health emergency.

Panel C shows the results for other crimes—battery and other classes of theft. In general, the patterns are similar to those indicated above, with statistically significant decreases in the total number of cases, incidents in urban and rural areas, and incidents with male or female victims.<sup>7</sup>

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<sup>6</sup> To verify that there was a significant difference between the two coefficients, a T-test was performed between the different pairs of coefficients. Following are the p-values of the statistical two-tailed test: (1) urban vs. rural homicide:  $p = 0.022$ ; (2) homicides of males vs. females  $p = 0.000$ ; (3) urban vs. rural vehicle thefts  $p < 0.001$ ; and (4) vehicle thefts, male vs. female victims:  $p < 0.001$ .

<sup>7</sup> Some of the offenses included in the category of “other theft” show information on victim's gender.

**Table 2. The Effect of Confinement on Certain Offenses and Operational Results of 1,122 Municipalities**

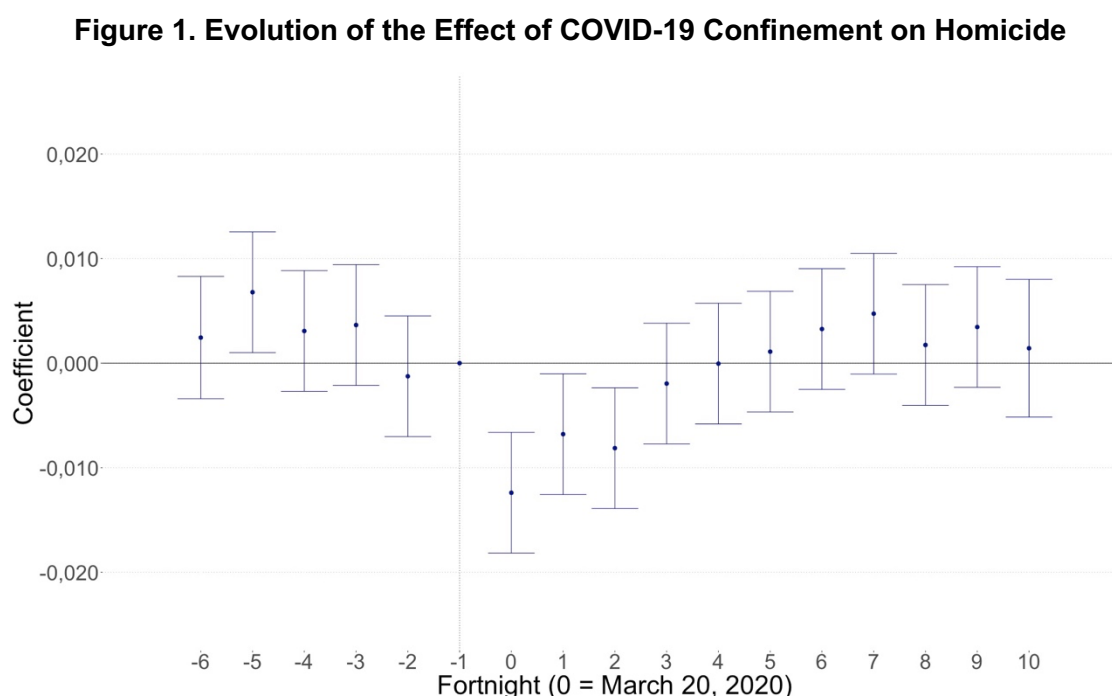
	Zone			Gender	
	Total	Rural	Urban	Men	Women
	[S.E.]	[S.E.]	[S.E.]	[S.E.]	[S.E.]
	% Variation	% Variation	% Variation	% Variation	% Variation
	(1)	(2)	(3)	(4)	(5)
<i>A: Main Offenses</i>					
Homicides	-0.005*** [0.001] -15.5%	-0.001** [0.001] -13.7%	-0.003*** [0.001] -16.5%	-0.004*** [0.001] -15.2%	-0.0004* [0.000] -19%
Vehicle Theft	-0.012*** [0.001] -44.8%	-0.001*** [0.000] -46.6%	-0.010*** [0.001] -44.9%	-0.010*** [0.001] -48.9%	-0.002*** [0.001] -30.1%
<i>B: Operational Results</i>					
Arrests: Homicidal Violence	-0.043*** [0.003] -44.1%	-0.002*** [0.001] -16.5%	-0.041*** [0.003] -48.2%	-0.039*** [0.003] -44.3%	-0.004*** [0.001] -42.4%
Arrests: Public Health	0.041*** [0.002] 21,040.6%	0.006*** [0.001] 11,583.7%	0.035*** [0.002] 24,636.9%	0.036*** [0.002] 21,225.9%	0.005*** [0.000] 19,829.1%
Arrests: Thefts	-0.065*** [0.004] -52.9%	-0.001*** [0.001] -15.8%	-0.064*** [0.004] -55.2%	-0.055*** [0.004] -52.6%	-0.011*** [0.001] -54.2%
Arrests: Other	-0.214*** [0.011] -60%	-0.031*** [0.002] -47.5%	-0.183*** [0.010] -62.8%	-0.194*** [0.010] -59.9%	-0.020*** [0.001] -60.9%
<i>C: Other Offenses</i>					
Battery	-0.131*** [0.008] -45.3%	-0.007*** [0.001] -31%	-0.122*** [0.007] -46.6%	-0.076*** [0.004] -48.2%	-0.053*** [0.004] -41.7%
Other Theft	-0.769*** [0.044] -53.4%	-0.043*** [0.003] -44.7%	-0.728*** [0.044] -54.3%		
No. of Municipalities	1,122	1,122	1,122	1,122	1,122
Observations	514,998	514,998	514,998	514,998	514,998
EF Year	Yes	Yes	Yes	Yes	Yes
EF Day	Yes	Yes	Yes	Yes	Yes
EF Week	Yes	Yes	Yes	Yes	Yes
EF Department	Yes	Yes	Yes	Yes	Yes

Notes: S.E. refers to standard error. The percentage variation is calculated in respect to the daily average between January 1, 2019, and March 19, 2020. When using information for Bogotá, the model includes indicator variables ("dummies") to keep track of deaths in the prison facility La Modelo in 2020 and the assault on the cadet school in 2019. Asterisks in the table indicate that the result is statistically significant at 90 percent confidence (\*), 95 percent confidence (\*\*), and 99 percent confidence (\*\*\*).

## Homicides

The event study (Figure 1) shows that the average decline in homicides (reported in Table 2) is concentrated in the first three fortnights of the health emergency. During these weeks there were around 40 percent fewer homicides committed than during the pre-quarantine period.

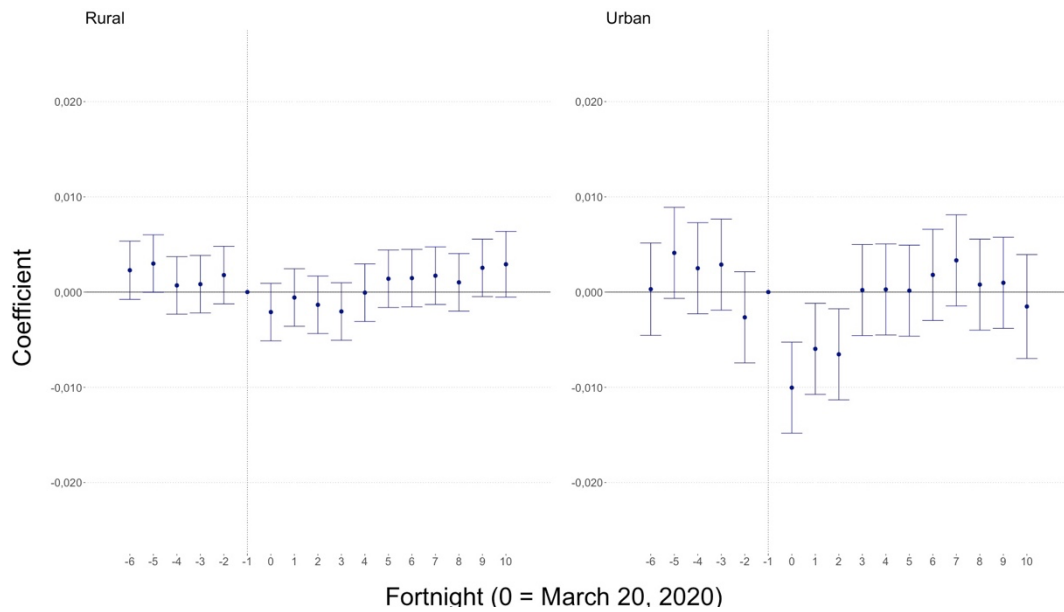
The analysis by geographical area (urban or rural, Figure 2) shows an evident decline in homicides during the first fortnights in urban areas, but less so in rural areas. The analysis that distinguishes homicides by the victim's gender (Figure 3) suggests that the drop observed in the initial fortnights corresponds to a reduction in homicides with male victims.<sup>8</sup>



Notes: Authors' calculations based on SIEDCO data. The model includes day-of-the-week, week-of-the-year, department, and year fixed effects. The model also includes indicator variables ("dummies") for the attack against the cadet school and the rioting in La Modelo prison facility in Bogotá. The bands represent 90 percent confidence intervals.

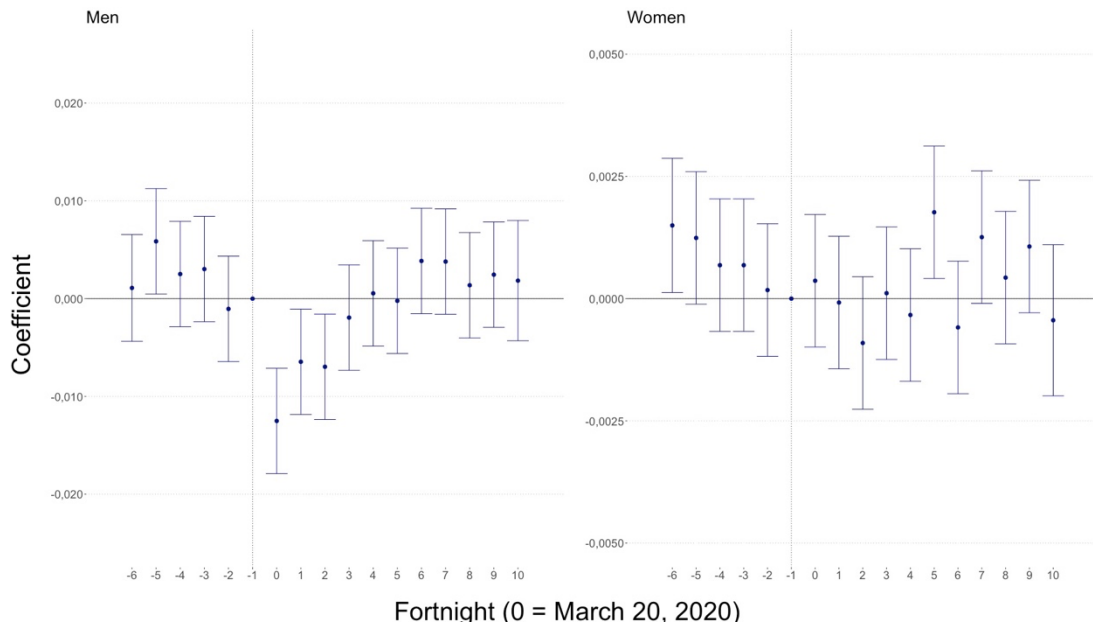
<sup>8</sup> The relatively low precision in estimates of the impact on homicides in rural areas and with female victims may be explained by the relatively low frequency of these incidents.

**Figure 2. Effect of Confinement on Homicides Based on Zone of Occurrence**



*Notes:* Authors' calculations based on SIEDCO data. The model includes day-of-the-week, week-of-the-year, department, and year fixed effects. The model also includes indicator variables ("dummies") for the attack against the cadet school and the rioting in La Modelo prison facility in Bogotá. The bands represent 90 percent confidence intervals.

**Figure 3. Effect of Confinement on Homicides Based on Victim's Gender**



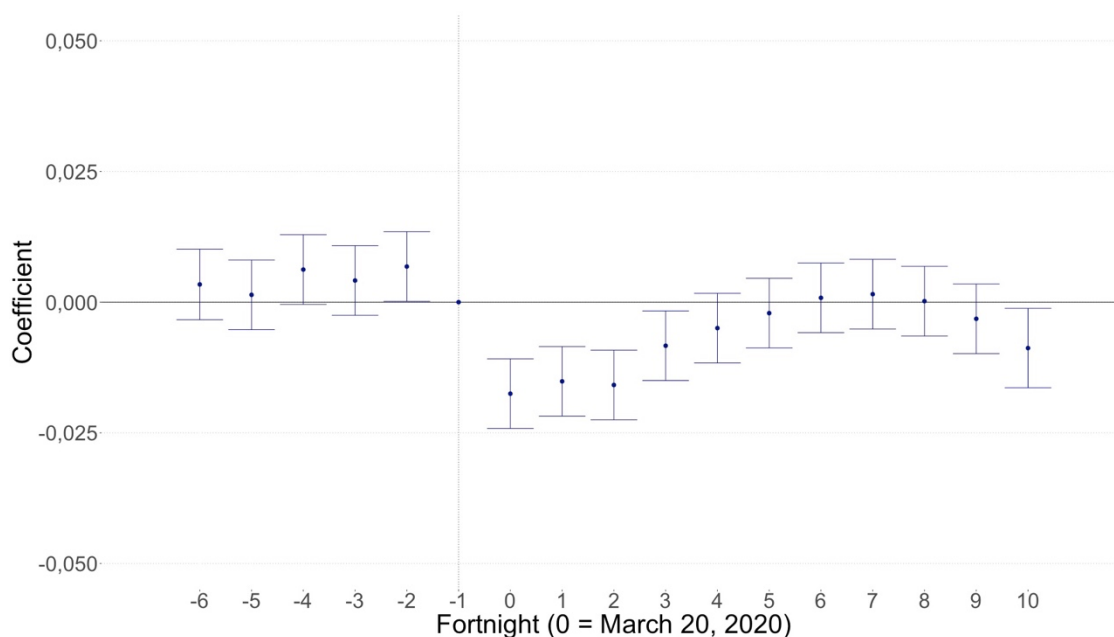
*Notes:* Authors' calculations based on SIEDCO data. The model includes day-of-the-week, week-of-the-year, department, and year fixed effects. The model also includes indicator variables ("dummies") for the attack against the cadet school and the rioting in the La Modelo prison facility in Bogotá. The bands represent 90 percent confidence intervals.

### Vehicle Theft

The event study (Figure 4) shows that the average decline in vehicle theft (reported in Table 2) is concentrated in the first four fortnights of the health emergency.

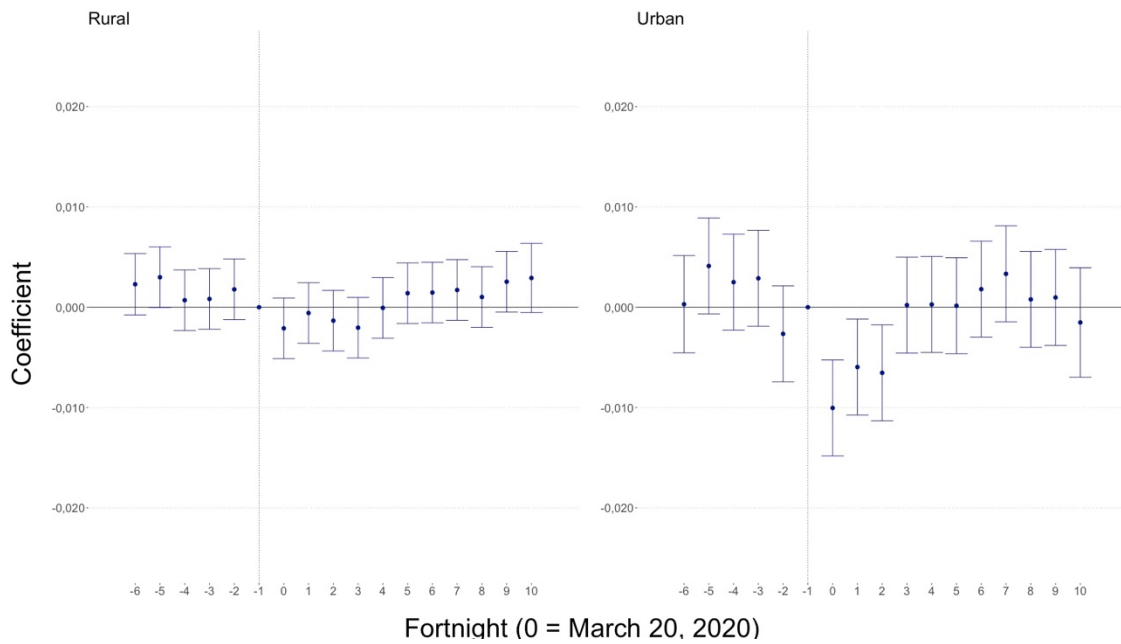
The analysis by geographical area (urban or rural, Figure 5) shows an evident decline in vehicle theft reports in the first fortnights in urban areas, but less so in rural areas, where a statistically significant drop is only detected in one fortnight. The analysis based on the victims' gender (Figure 6) indicates that these incidents of theft decreased for both male and female victims.

**Figure 4. Effect of COVID-19 Confinement on Vehicle Theft**



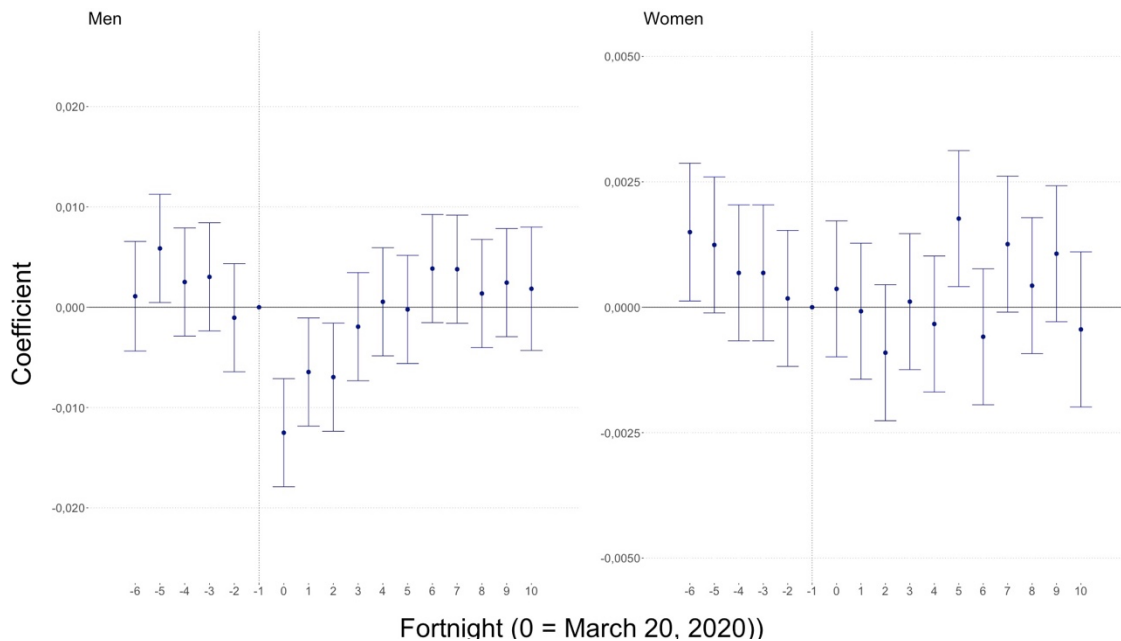
Notes: Authors' calculations based on SIEDCO data. The model includes day-of-the-week, week-of-the-year, department, and year fixed effects. The bands represent 90 percent confidence intervals.

**Figure 5. Effect of COVID-19 Confinement on Vehicle Theft Based on Zone**



*Notes:* Authors' calculations based on SIEDCO data. The model includes day-of-the-week, week-of-the-year, department, and year fixed effects. The bands represent 90 percent confidence intervals.

**Figure 6. Effect of COVID-19 Confinement on Vehicle Theft Based on Gender**



*Notes:* Authors' calculations based on SIEDCO data. The model includes day-of-the-week, week-of-the-year, department, and year fixed effects. The bands represent 90 percent confidence intervals.



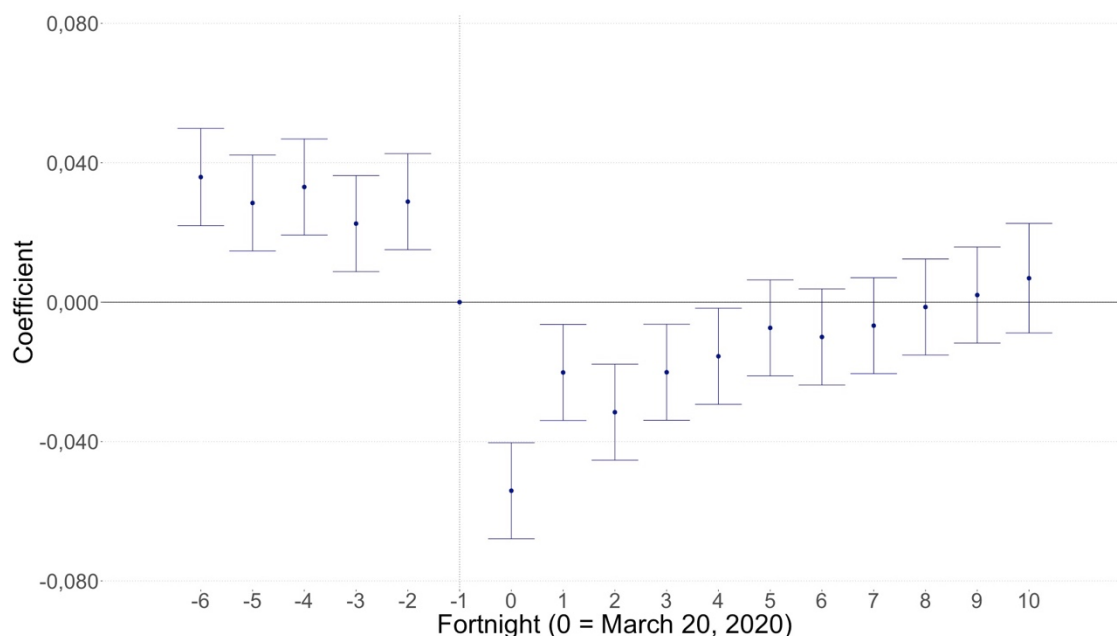
### *Arrests for Homicidal Violence*

The event study (Figure 7) shows that the average reduction in arrests for homicidal violence (reported in Table 2) was concentrated in the first two and a half months following the start of the health emergency (i.e., five fortnights).

There was a clear drop observed during the first fortnights in urban and rural zones, though it was more pronounced in urban ones (Annex B, Figure B.1). The analysis of the detainees by gender indicates that the drop was more pronounced among males (Annex B, Figure B.2).

The analysis also reveals that before the health emergency, trends in 2020 in arrests for homicidal violence were already systematically different from those of 2019 (except in rural areas). The coefficients are statistically different from zero between the second and sixth fortnight before the confinement period.

**Figure 7. Effect of COVID-19 Confinement on Arrests for Homicidal Violence**

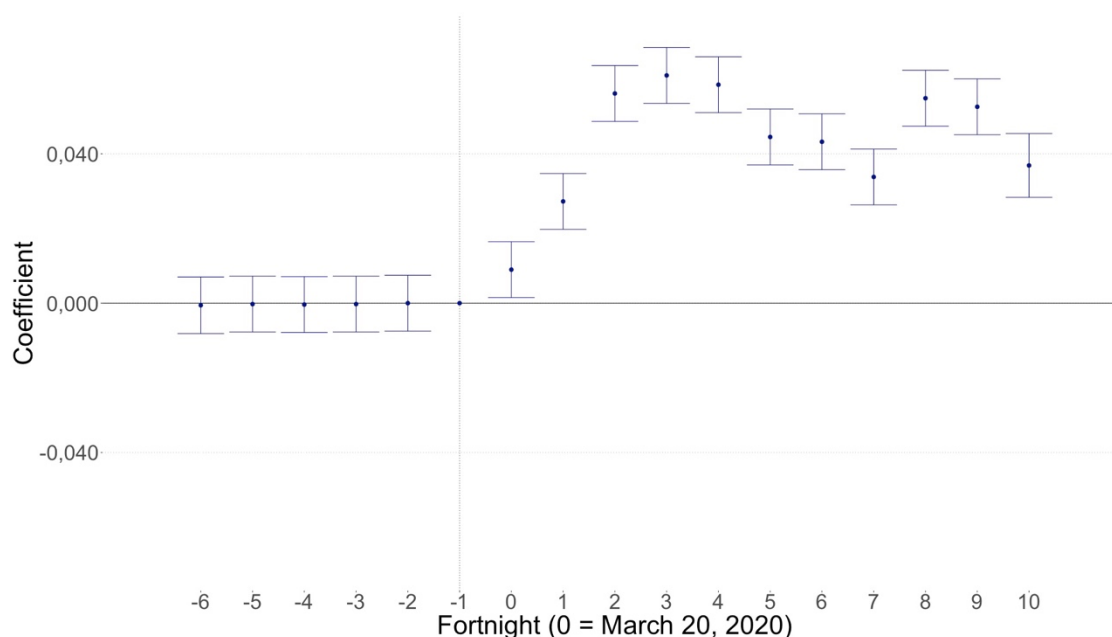


*Notes:* Authors' calculations based on SIEDCO data. The model includes day-of-the-week, week-of-the-year, department, and year fixed effects. The bands represent 90 percent confidence intervals.

### *Arrests for Public Health Offenses*

There was an increase in the average number of arrests for public health offenses (see evolution in Table 2) during the entire period of social confinement analyzed (Figure 8). This pattern is observed in urban and rural areas and is observed in the arrests of people of both sexes, though the incidences are higher in the cities and for males (see Annex B, Figures B.3 and B.4).

**Figure 8. Effect of Confinement on Arrests for Public Health Offenses**



*Notes:* Authors' calculations based on SIEDCO data. The model includes day-of-the-week, week-of-the-year, department, and year fixed effects. The bands represent 90 percent confidence intervals.

### Analysis by Region

This section presents the findings broken down by region. Colombia's 1,122 municipalities were grouped together in six regions—based on the National Planning Department's regionalization of the budget—to observe whether the change in crime and arrests' trends differed across regions. This analysis makes it possible to observe those areas of the country where the health emergency exerted a larger or smaller impact on crime and police actions.

Following are the six regions and the departments that comprise each one.

- **Región Caribe** (Caribbean Region): Atlántico, Bolívar, Cesar, Córdoba, La Guajira, Magdalena, Sucre and San Andrés, Providencia, and Santa Catalina.
- **Región Centro Oriente** (Central Eastern Region): Bogotá D.C., Boyacá, Cundinamarca, Norte de Santander, and Santander.
- **Región Eje Cafetero** (Coffee Belt Region): Antioquia, Caldas, Quindío, and Risaralda.
- **Región Pacífico** (Pacific Region): Chocó, Cauca, Nariño, and Valle del Cauca.

- **Región Sur Oriente** (Southeastern Region): Amazonas, Arauca, Caquetá, Casanare, Guainía, Guaviare, Huila, Meta, Putumayo, Tolima, Vaupés, and Vichada.<sup>9</sup>

Table 3 presents the results of the difference-in-differences model for the various geographical regions. Panel A reports results for the two main offenses (homicides and vehicle thefts). Daily vehicle theft reports fell across all regions—between 38 and 71 percent—while homicides fell by 14 percent in Caribe and 30.7 percent in Eje Cafetero, the only regions with statistically significant changes.

In all regions there was a statistically significant decrease in arrests associated with homicidal violence, theft, and other crimes (Panel B), ranging from 33 to 74 percent of the daily average for the pre-pandemic period. Arrests associated with public health offenses rose significantly in all regions.

Complaints lodged about other offenses (Panel C) followed patterns similar to those previously indicated, with statistically significant declines throughout the country.

### *Homicides*

The results of the event studies for the different regions (Figure 9) showed that the average drop during the quarantine (reported in Table 3) was concentrated in the initial fortnights of the health emergency, in the Caribe and Eje Cafetero regions.

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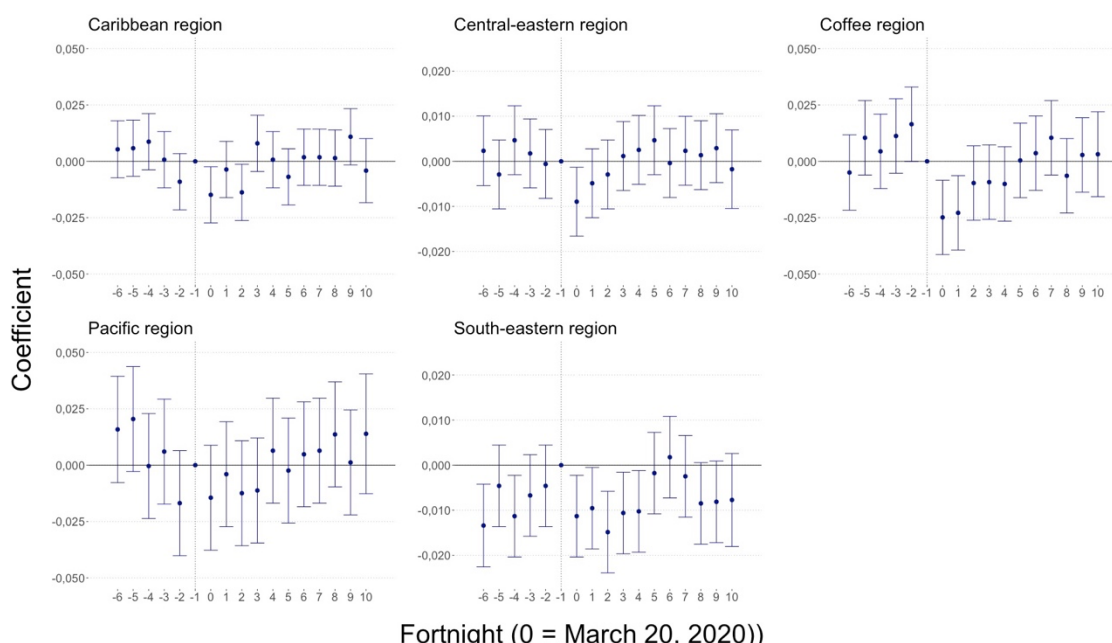
<sup>9</sup> This study links together the regions of Centro Sur and Llano, which appear separately in the National Planning Department's budgetary distribution, to facilitate the analysis and interpretation of the results.

**Table 3. Effects of Confinement on Criminal Offenses and Operational Results by Region**

	Caribe [S.E.] % Variation (1)	Centro Oriente [S.E.] % Variation (2)	Eje Cafetero [S.E.] % Variation (3)	Pacífico [S.E.] % Variation (4)	Sur Oriente [S.E.] % Variation (5)
<i>A: Main Offenses</i>					
Homicides	-0.004* [0.003] -14%	-0.002 [0.001] -13.5%	-0.014*** [0.004] -30.7%	-0.006 [0.005] -9.7%	-0.001 [0.002] -5.2%
Vehicle Theft	-0.010*** [0.002] -71.1%	-0.014*** [0.002] -42%	-0.010*** [0.004] -38.6%	-0.021*** [0.006] -44.3%	-0.001* [0.001] -39.6%
<i>B: Operational Results</i>					
Arrests: Homicidal Violence	-0.064*** [0.008] -50.3%	-0.049*** [0.006] -49.3%	-0.035*** [0.008] -33.9%	-0.039*** [0.008] -39.2%	-0.022*** [0.004] -38.3%
Arrests: Public Health	0.076*** [0.007] 24,591.6%	0.025*** [0.003] 6,101.7%	0.061*** [0.005] —	0.031*** [0.003] —	0.030*** [0.003] 54,247%
Arrests: Thefts	-0.063*** [0.008] -57.5%	-0.093*** [0.011] -49%	-0.057*** [0.010] -51.9%	-0.049*** [0.007] -60.6%	-0.038*** [0.005] -58.4%
Arrests: Other	-0.267*** [0.018] -73.7%	-0.163*** [0.014] -56.4%	-0.486*** [0.056] -65.3%	-0.135*** [0.015] -48.8%	-0.086*** [0.011] -41.7%
<i>C: Other Offenses</i>					
Battery	-0.152*** [0.016] -54.1%	-0.154*** [0.015] -46.4%	-0.121*** [0.019] -41.7%	-0.101*** [0.022] -33.7%	-0.103*** [0.011] -49.4%
Other Theft	-0.525*** [0.063] -46.5%	-1.032*** [0.097] -51.4%	-0.860*** [0.134] -55.9%	-0.821*** [0.115] -61.9%	-0.404*** [0.040] -55.8%
No. of Municipalities	197	367	178	178	202
Comments	90,423	168,453	81,702	81,702	92,718
EF Year	Yes	Yes	Yes	Yes	Yes
EF Day	Yes	Yes	Yes	Yes	Yes
EF Week	Yes	Yes	Yes	Yes	Yes
EF Department	Yes	Yes	Yes	Yes	Yes

Notes: S.E. refers to standard error. The percentage variation is calculated in respect to the daily average between January 1, 2019, and March 19, 2020. The minus sign means that before confinement there was not a single case of arrest for any public health–related reason. When using information for Bogotá, the model includes indicator variables (“dummies”) to keep track of deaths in the prison facility La Modelo in 2020 and the assault on the cadet school in 2019. Asterisks in the table indicate that the result is statistically significant at 90 percent confidence (\*), 95 percent confidence (\*\*), and 99 percent confidence (\*\*\*).

**Figure 9. Effect of COVID-19 Confinement on the Incidence of Homicides by Region**



*Notes:* Authors' calculations based on SIEDCO data. The model includes day-of-the-week, week-of-the-year, department, and year fixed effects. The model also includes indicator variables ("dummies") for the attack against the cadet school and the rioting in La Modelo prison facility in Bogotá. The bands represent 90 percent confidence intervals.

### *Vehicle Theft*

The event studies for the different regions (Figure 10) show that the average drop in vehicle theft (reported in Table 3) was concentrated in the first three fortnights of the health emergency in all regions. In Caribe and Sur Oriente, the coefficients have stayed below pre-quarantine levels during a more prolonged period than in other regions.

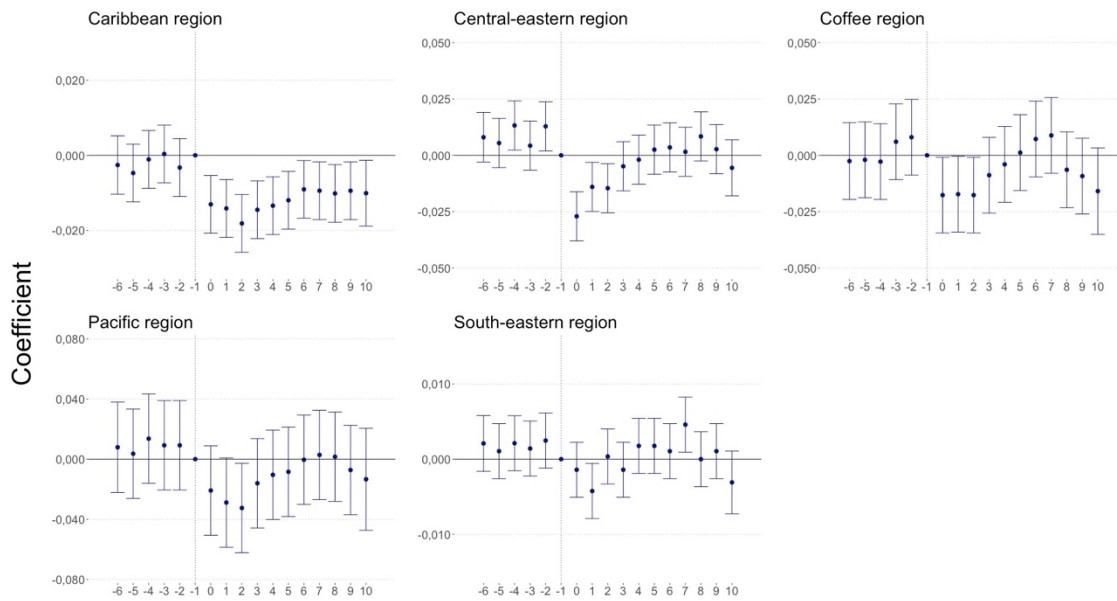
### *Arrests for Homicidal Violence*

The event studies for the different regions (Figure 11) show that the average decline in arrests for homicidal violence during the emergency (reported in Table 3) was concentrated in the initial fortnights of the quarantine in all regions.

### *Arrests for Public Health Offenses*

According to the event studies (see Figure 12), the average rise in arrests for public health offenses during the pandemic (reported in Table 3) is observed during all the period following the start of the health emergency for all regions.

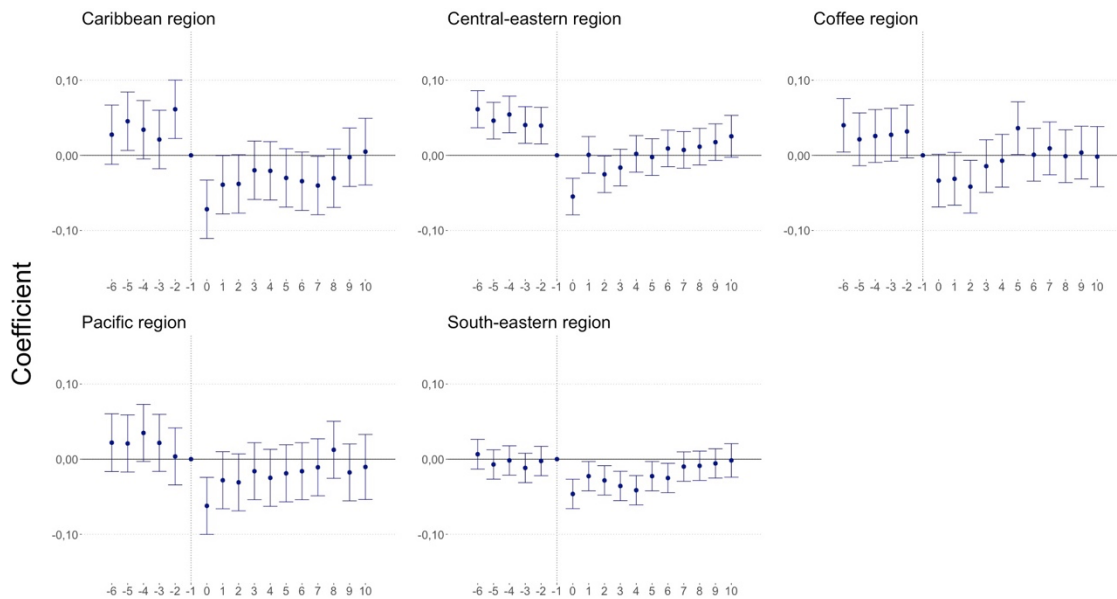
**Figure 10. Effect of COVID-19 Confinement on Vehicle Theft by Region**



Fortnight (0 = March 20, 2020))

Notes: Authors' calculations based on SIEDCO data. The model includes day-of-the-week, week-of-the-year, department, and year fixed effects. The bands represent 90 percent confidence intervals.

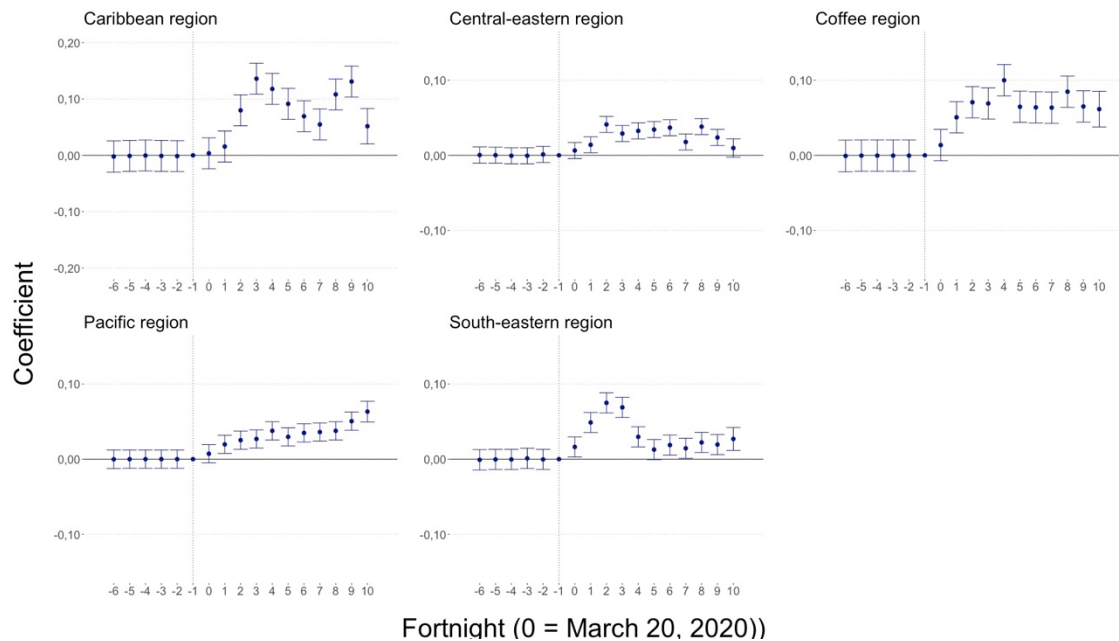
**Figure 11. Effect of Confinement on Arrests for Homicidal Violence by Region**



Fortnight (0 = March 20, 2020))

Notes: Authors' calculations based on SIEDCO data. The model includes day-of-the-week, week-of-the-year, department, and year fixed effects. The bands represent 90 percent confidence intervals.

**Figure 12. Effect of Confinement on Arrests for Public Health Offenses by Region**



*Notes:* Authors' calculations based on SIEDCO data. The model includes day-of-the-week, week-of-the-year, department, and year fixed effects. The bands represent 90 percent confidence intervals.

### Analysis of Impact on Poverty Levels

This section presents the findings on the quarantine's impact on crime and arrests by poverty levels. We split the 1,122 Colombian municipalities into four groups according to the quartiles of the Multidimensional Poverty Index (MPI) estimated by DANE based on 2018 census data. The MPI identifies multiple deficiencies of access to services and other dimensions of poverty for households and individuals. The municipalities were divided into four groups of approximately equal size (from 277 to 283 municipalities). The first quartile grouped together the low-poverty municipalities, those with the lowest MPI rating; in the second, those with a medium-low poverty rating; in the third, those with a medium-high poverty rating, and in the final quartile, municipalities with a high poverty rating, those with the highest MPI reading. Table 4 presents the results of the difference-in-differences model for these groups of municipalities.

**Table 4. Effects of Confinement on Certain Offenses and Operational Results by Quartile according to the 2018 MPI**

	Poverty			
	Low [S.E.] % Variation (1)	Medium-Low [S.E.] % Variation (2)	Medium-High [S.E.] % Variation (3)	High [S.E.] % Variation (4)
<i>A: Main Offenses</i>				
Homicides	-0.010** [0.004] -14.1%	-0.003* [0.002] -17.4%	-0.003* [0.002] -16.4%	-0.003* [0.002] -18.5%
Vehicle Theft	-0.040*** [0.006] -43.4%	-0.003*** [0.001] -52.5%	-0.002** [0.001] -41.8%	-0.002*** [0.001] -80.9%
<i>B: Operational Results</i>				
Arrests: Homicidal Violence	-0.130*** [0.011] -45.6%	-0.016*** [0.003] -38.9%	-0.015*** [0.003] -40.4%	-0.010*** [0.003] -41.1%
Arrests: Public Health	0.109*** [0.006] 30,998.3%	0.025*** [0.002] 61,865%	0.019*** [0.002] 9,720.7%	0.012*** [0.002] 6,071.4%
Arrests: Thefts	-0.226*** [0.017] -52.8%	-0.020*** [0.003] -60.2%	-0.010*** [0.002] -45.7%	-0.004*** [0.001] -48%
Arrests: Other	-0.672*** [0.041] -62.7%	-0.089*** [0.007] -56.9%	-0.063*** [0.006] -51.8%	-0.032*** [0.005] -41%
<i>C: Other Offenses</i>				
Battery	-0.421*** [0.029] -46.5%	-0.045*** [0.005] -40.7%	-0.034*** [0.004] -39.3%	-0.023*** [0.003] -44%
Other Theft	-2.745*** [0.172] -53.5%	-0.190*** [0.014] -58.7%	-0.085*** [0.008] -41.5%	-0.054*** [0.005] -57.9%
No. of Municipalities	281	277	283	281
Comments	128,979	127,143	129,897	128,979
EF Year	Yes	Yes	Yes	Yes
EF Day	Yes	Yes	Yes	Yes
EF Week	Yes	Yes	Yes	Yes
EF Department	Yes	Yes	Yes	Yes

Notes: S.E. refers to standard error. The percentage variation is calculated in respect to the daily average between January 1, 2019, and March 19, 2020. When using information for Bogotá, the model includes indicator variables ("dummies") to keep track of the deaths in the prison facility La Modelo in 2020 and the assault on the cadet school in 2019. Asterisks in the table indicate that the result is statistically significant at 90 percent confidence (\*), 95 percent confidence (\*\*), and 99 percent confidence (\*\*\*).



The results suggest a fall in the average number of daily cases for homicides and vehicle thefts (Panel A). The coefficients are negative and statistically significant for all the groups of municipalities.

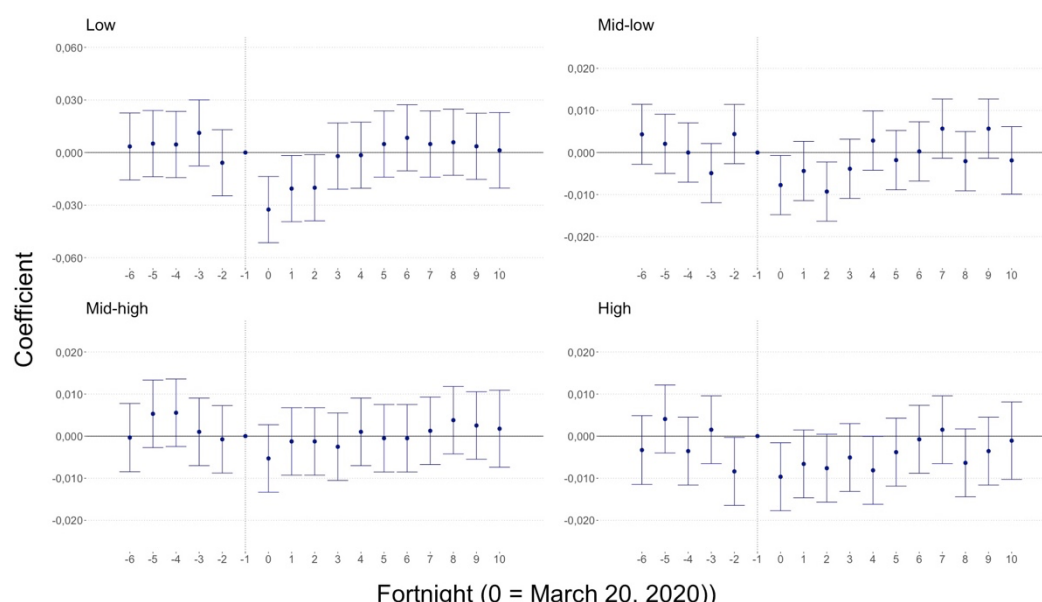
There was a statistically significant decrease in the arrests associated with homicidal violence, theft, and other criminal offenses (Panel B) in all groups of municipalities. Arrests associated with public health–related offenses rose significantly in all groups.

In general, the patterns for other offenses (Panel C) are similar to those reported above, with statistically significant decreases in the number of cases reported in the four groups.

### *Homicides*

The event studies of homicides indicate that the average drop in this criminal offense during the quarantine (see Table 4) was concentrated in the first two weeks of the health emergency. Declines are similar in all groups except for the medium-high poverty level one.

**Figure 13. Effect of COVID-19 Confinement on Homicides by Poverty Level according to the 2018 MPI**

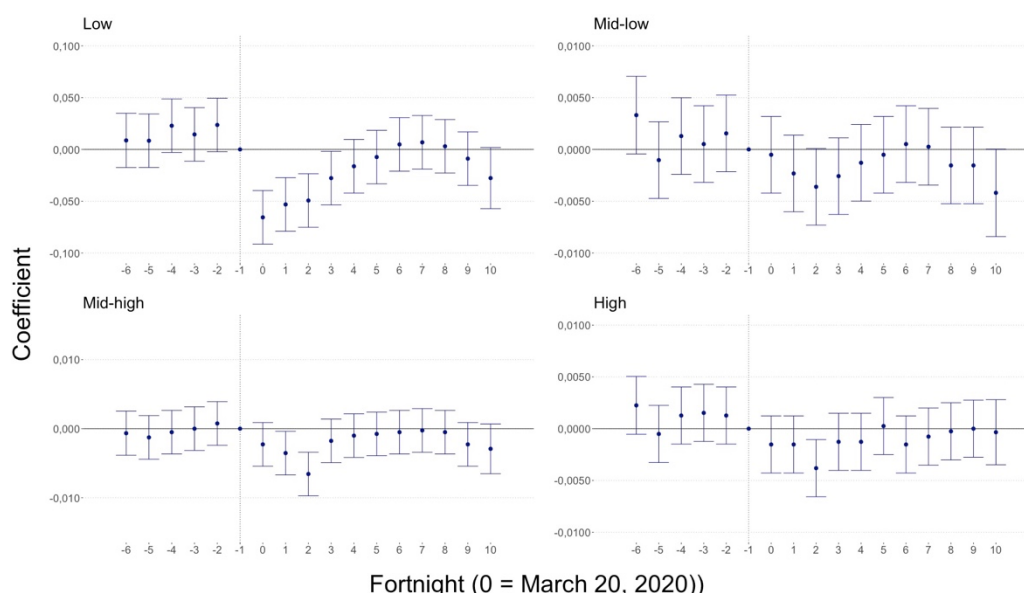


*Notes:* Authors' calculations based on SIEDCO data. The model includes day-of-the-week, week-of-the-year, department, and year fixed effects. The model also includes indicator variables ("dummies") for the attack against the cadet school and the rioting in La Modelo prison facility in Bogotá. The bands represent 90 percent confidence intervals.

### *Vehicle Theft*

The event studies for vehicle theft (Figure 14) suggest that the average decrease in these offenses is concentrated in the low-poverty quartile and in the first four fortnights following the health emergency. There were no significant declines in the other groups, possibly due to a relatively low frequency of these offenses.

**Figure 14. Evolution of the Effect of COVID-19 Confinement on Vehicle Theft by Poverty Level according to the 2018 MPI**



Notes: Authors' calculations based on SIEDCO data. The model includes day-of-the-week, week-of-the-year, department, and year fixed effects. The bands represent 90 percent confidence intervals.

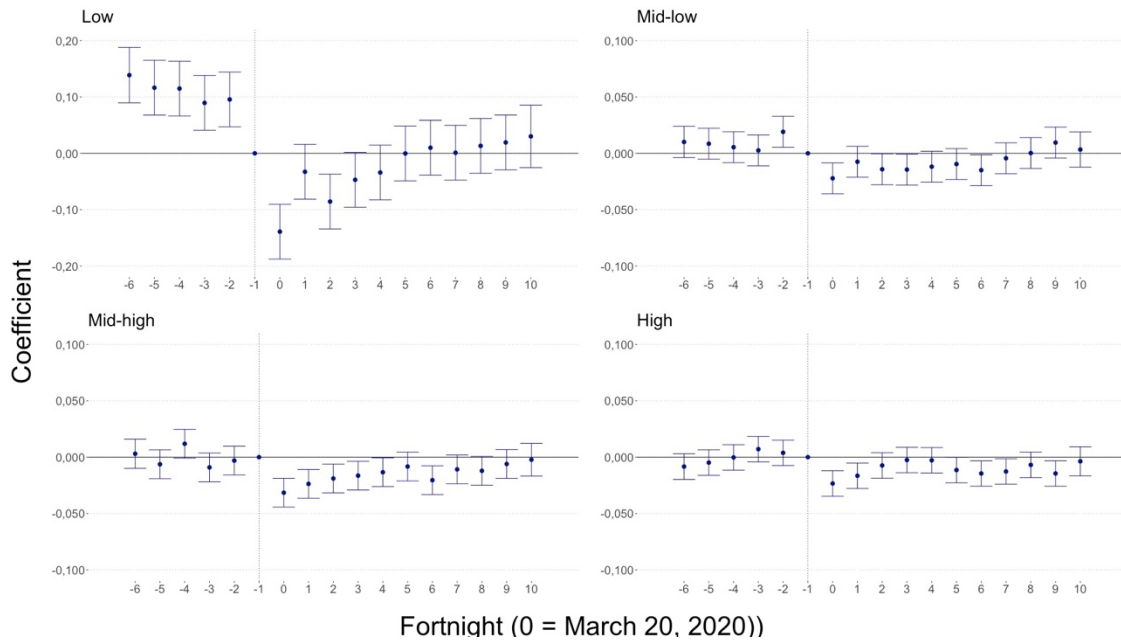
### *Arrests for Homicidal Violence*

The event studies for homicidal violence arrests show that the average drop observed during the quarantine (reported in Table 4) was concentrated in the first three or four fortnights of social confinement (Figure 15). This result is observed in the four groups of municipalities.

### *Arrests for public health offenses*

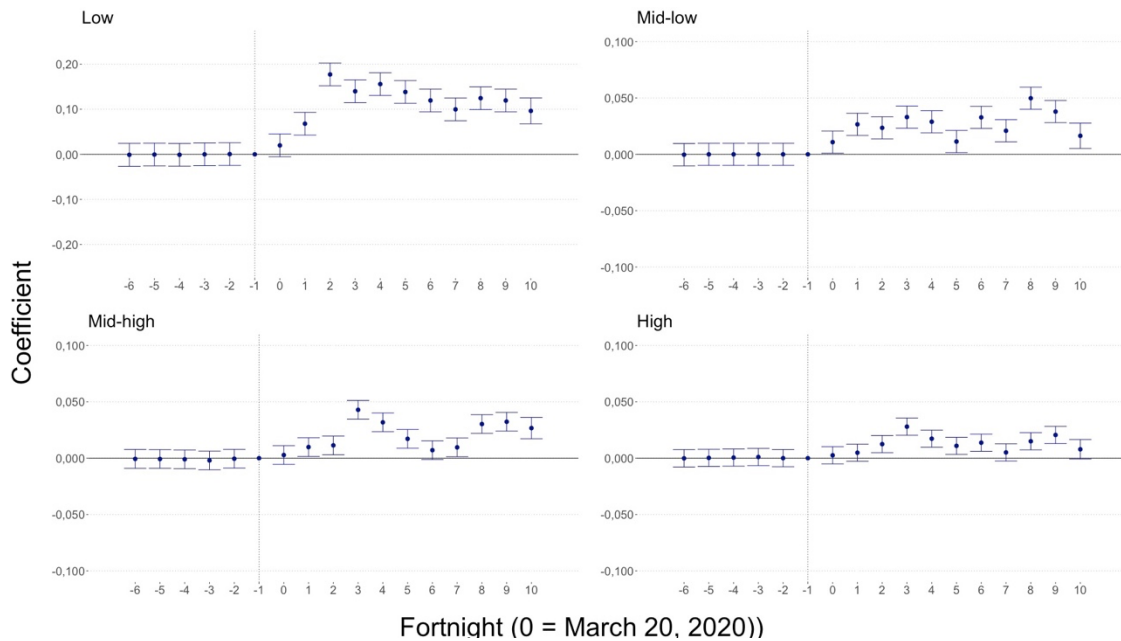
According to the event studies (Figure 16), the average rise in arrests for public health offenses during the pandemic (Table 3) is observed in all the fortnights of the health emergency and in all quartiles.

**Figure 15. Evolution of the Effect of COVID-19 Confinement on Arrests for Homicidal Violence by Poverty Level according to the 2018 MPI**



Notes: Authors' calculations based on SIEDCO data. The model includes day-of-the-week, week-of-the-year, department, and year fixed effects. The bands represent 90 percent confidence intervals.

**Figure 16. Effect of COVID-19 Confinement on Arrests for Public Health Offenses by Poverty Level according to the 2018 MPI**



Notes: Authors' calculations based on SIEDCO data. The model includes day-of-the-week, week-of-the-year, department, and year fixed effects. The bands represent 90 percent confidence intervals.

## Special Zones: PDET and PNIS Municipalities

This section analyzes the pandemic's average impact on crimes and arrests in the 170 municipalities in the PDET, and the 56 municipalities in the PNIS.<sup>10</sup>

Table 5 presents the results of the difference-in-differences model for municipalities in the PDET and PNIS programs and for their complements (that is, municipalities not in PDET and municipalities not in PNIS). The incidence of homicide and vehicle theft (Panel A) decreased significantly in all groups, except for homicides in the PNIS municipalities. For the latter, the coefficients are negative but not statistically significant (lack of precision may be due to the small number of municipalities in this group). With the available data, it is not possible to conclude that the quarantine led to a decline in homicides in the municipalities in the PNIS.

As for arrests (Panel B), there was a statistically significant decrease in arrests associated with homicidal violence, theft, and other offenses in all groups, except for arrests for theft in the PNIS municipalities. Arrests associated with noncompliance with public health regulations increased in all groups of municipalities. These increases are statistically significant and extremely large in percentage changes (due to the limited occurrence of these offenses in the reference period).

In general, the patterns in other offenses (Panel C) are similar to those indicated previously, with statistically significant decreases in the number of cases reported in all groups of municipalities.

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<sup>10</sup> According to the Office of the President of the Republic of Colombia, PDET municipalities are part of a “subregional program of comprehensive transformation of the rural area in ten years, through which the instruments of Comprehensive Rural Reform are more expeditiously set in motion in the territories most affected by armed conflict, poverty, illegal economic activities, and weak institutions” (<http://especiales.presidencia.gov.co/Documents/20170718-pdet/que-son-pdet.html>).

The PNIS program is described as follows by the UNODC: “There are 99,096 families who are linked to and are beneficiaries of the PNIS, of which 67,251 are illicit crop growers. Of these, 14,989 are farmers who do not cultivate illegal crops but live in areas affected by narcotraffic, and 16,857 are collectors of coca leaves. These families are distributed across 56 municipalities of 14 departments, where 6 percent of Colombia's illegal crops are concentrated, according to the 2018 SIMCI Census (Sistema Integrado de Monitoreo de Cultivos Ilícitos, Comprehensive Illegal Crop Monitoring System)” ([https://www.unodc.org/documents/colombia/2020/Mayo/INFORME\\_EJECUTIVO\\_PNIS\\_No.\\_21.pdf](https://www.unodc.org/documents/colombia/2020/Mayo/INFORME_EJECUTIVO_PNIS_No._21.pdf)).

**Table 5. Effect of Confinement on Certain Offenses and Operational Results by PDET and PNIS Divisions**

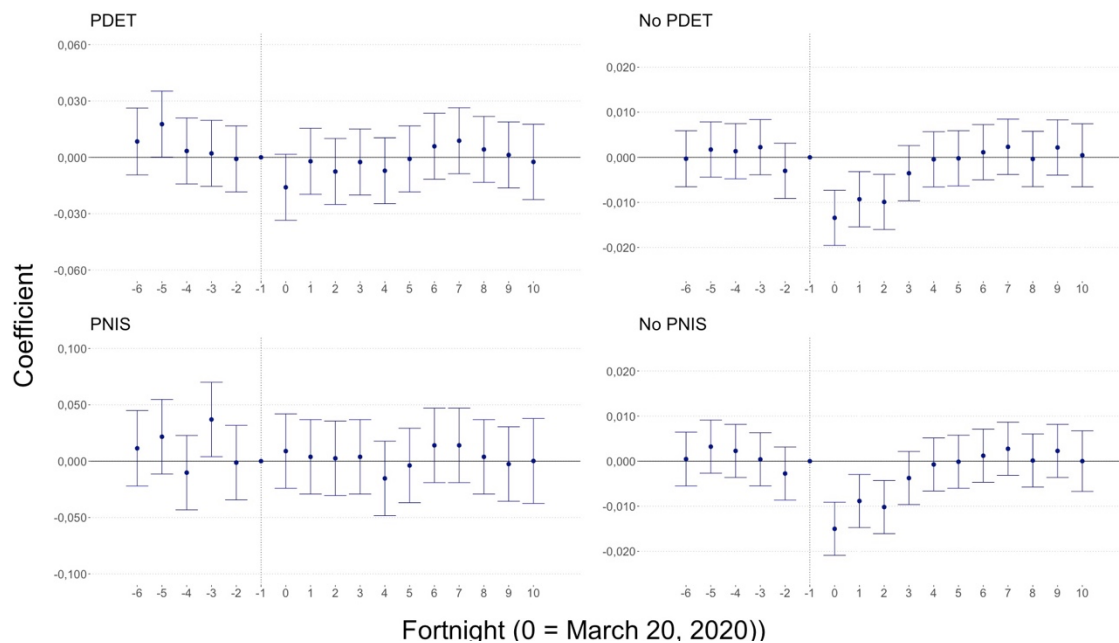
	PDET		PNIS	
	PDET [S.E.] % Variation (1)	No PDET [S.E.] % Variation (2)	PNIS [S.E.] % Variation (3)	No PNIS [S.E.] % Variation (4)
<i>A: Main Offenses</i>				
Homicides	-0.009** [0.004] -16.9%	-0.004*** [0.001] -15%	-0.007 [0.007] -12.6%	-0.005*** [0.001] -15.8%
Vehicle Theft	-0.003** [0.001] -34%	-0.013*** [0.002] -45.5%	-0.009*** [0.003] -77.4%	-0.012*** [0.002] -44.1%
<i>B: Operational Results</i>				
Arrests: Homicidal Violence	-0.029*** [0.005] -42.4%	-0.045*** [0.003] -44.3%	-0.027*** [0.009] -42.4%	-0.044*** [0.003] -44.2%
Arrests: Public Health	0.024*** [0.004] 30,132.7%	0.045*** [0.002] 20,447.7%	0.032*** [0.006] 16,003.1%	0.042*** [0.002] 21,311.4%
Arrests: Thefts	-0.026*** [0.004] -53.1%	-0.072*** [0.005] -52.9%	-0.003 [0.005] -10.9%	-0.068*** [0.005] -53.3%
Arrests: Other	-0.116*** [0.011] -52.1%	-0.232*** [0.013] -60.8%	-0.081*** [0.018] -37.5%	-0.221*** [0.011] -60.7%
<i>C: Other Offenses</i>				
Battery	-0.051*** [0.009] -31.4%	-0.145*** [0.009] -46.6%	-0.037*** [0.012] -30.4%	-0.136*** [0.008] -45.6%
Other Theft	-0.302*** [0.028] -56%	-0.853*** [0.052] -53.2%	-0.187*** [0.02] -62.3%	-0.800*** [0.047] -53.3%
No. of Municipalities	170	952	56	1,066
Comments	78,030	436,968	25,704	489,294
EF Year	Yes	Yes	Yes	Yes
EF Day	Yes	Yes	Yes	Yes
EF Week	Yes	Yes	Yes	Yes
EF Department	Yes	Yes	Yes	Yes

Notes: S.E. refers to standard error. The percentage variation is calculated in respect to the daily average between January 1, 2019, and March 19, 2020. When using information for Bogotá, the model includes indicator variables (“dummies”) to keep track of deaths in the prison facility La Modelo in 2020 and the assault on the cadet school in 2019. Asterisks in the table indicate that the result is statistically significant at 90 percent confidence (\*), 95 percent confidence (\*\*), and 99 percent confidence (\*\*\*).

## Homicides

The event studies (Figure 17) indicate that in the groups where declines were observed during the quarantine, they occurred in the first three fortnights of the health emergency. The municipalities in PNIS and PDET did not record significant reductions in any fortnight. This might be explained by the low incidence of the events and the smaller sample size, which makes for less precise estimates. With the data available, it is not possible to rule out that there was no reduction in the daily number of homicides in these groups of municipalities.

**Figure 17. Effect of COVID-19 Confinement on Homicides (PDET and PNIS)**

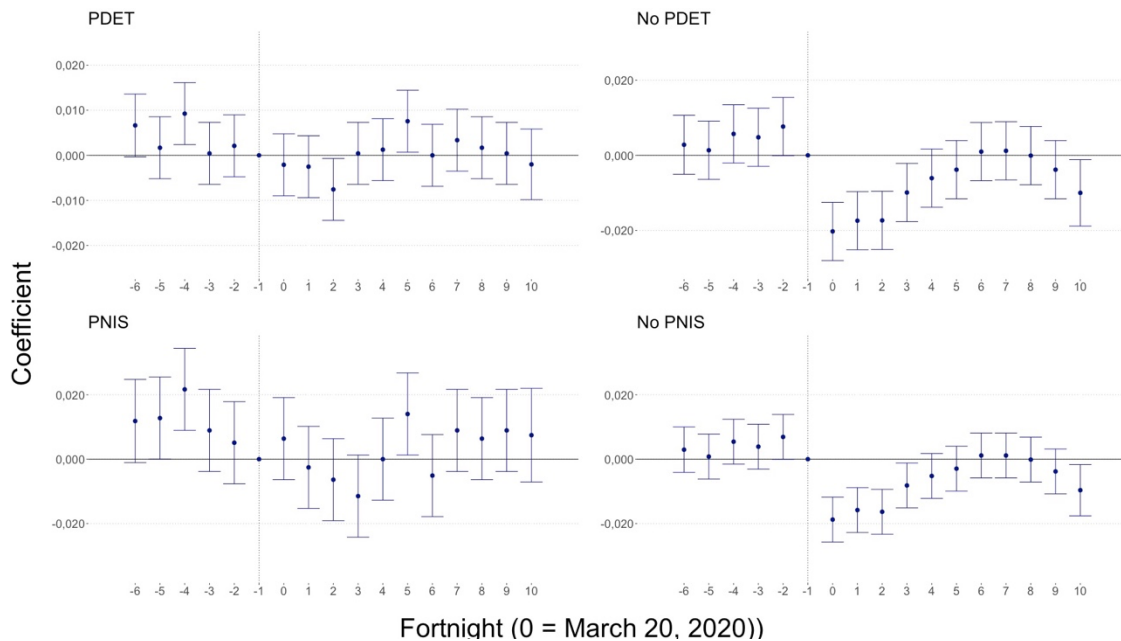


*Notes:* Authors' calculations based on SIEDCO data. The model includes day-of-the-week, week-of-the-year, department, and year fixed effects. The model also includes indicator variables ("dummies") for the attack against the cadet school and the rioting in the La Modelo prison facility in Bogotá. The bands represent 90 percent confidence intervals.

## Vehicle Theft

Motor vehicle theft fell at the start of the health emergency in the municipalities not included in the programs. In the participating municipalities, the event study shows there were no statistically significant decreases (Figure 18).

**Figure 18. Effect of COVID-19 Confinement on Vehicle Theft (PDET and PNIS)**



*Notes:* Authors' calculations based on SIEDCO data. The model includes day-of-the-week, week-of-the-year, department, and year fixed effects. The bands represent 90 percent confidence intervals.

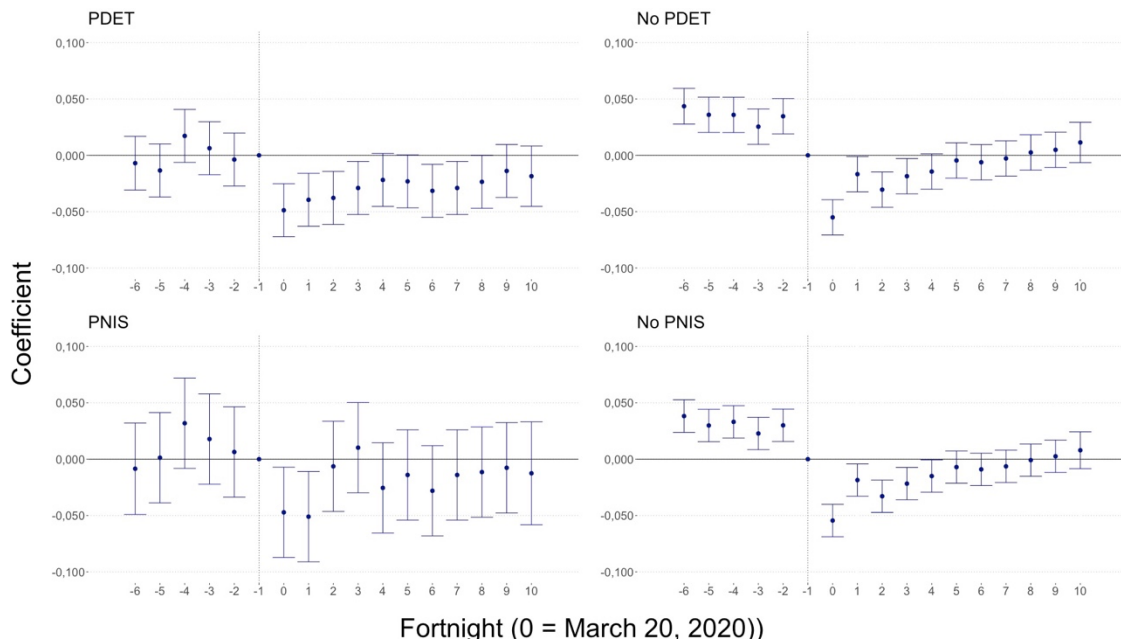
### *Arrests for Homicidal Violence*

The results of the event study suggest that the average reduction in arrest for homicidal violence (reported in Table 5) was concentrated in the initial fortnights of the health emergency (Figure 19).

### *Arrests for Public Health Offenses*

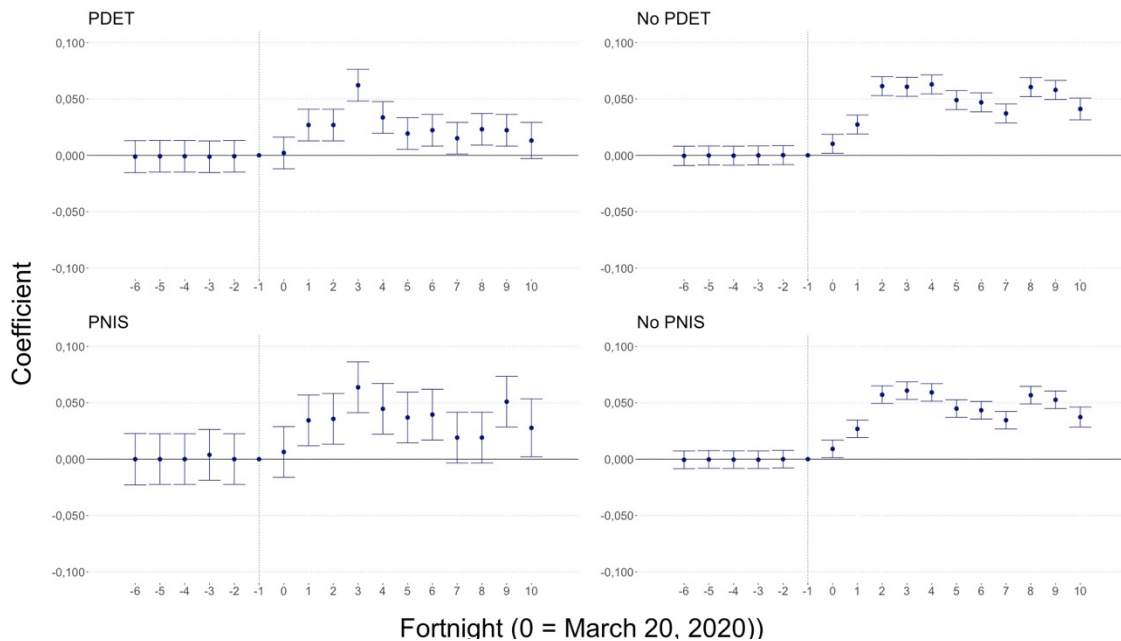
The rise in arrests for public health offenses that was registered during the quarantine (Table 5) was observed throughout the period of the health emergency under analysis for all groups of municipalities, as shown by the event study (Figure 20).

**Figure 19. Effect of Confinement on Arrests for Homicidal Violence (PDET and PNIS)**



*Notes:* Authors' calculations based on SIEDCO data. The model includes day-of-the-week, week-of-the-year, department, and year fixed effects. The bands represent 90 percent confidence intervals.

**Figure 20. Effect of Confinement on Arrests for Public Health Offenses (PDET and PNIS)**



*Notes:* Authors' calculations based on SIEDCO data. The model includes day-of-the-week, week-of-the-year, department, and year fixed effects. The bands represent 90 percent confidence intervals.



## 4. Discussion

This document presents preliminary evidence on the health emergency's impact on crime and PNC's operations. The majority of the crimes examined fell dramatically in the initial weeks of the pandemic when compared to their pre-quarantine trends. These declines have attenuated, and some crimes have already returned to pre-quarantine trends.

The changes in criminal dynamics may respond to the drastic changes in other social dynamics during the pandemic. First, mobility reductions due to fear of contagion and social confinement measures have reduced the interaction opportunities between potential victims and offenders. The changes in mobility and consumption patterns may have modified the incentives and opportunities for committing certain offenses and disrupted some criminal value chains. It is possible, for example, that during the period with the greatest mobility reductions, the demand for vehicle replacement parts may have declined and affected vehicle theft patterns.

The pandemic and the quarantine have also led to changes in police operations. During the period studied, there were fewer arrests for most offenses except those associated with compliance with the health emergency regulations. These arrests increased, reflecting the critical role of the police during the pandemic. Law enforcement officers have been on the front lines of response to prevent the spread of COVID-19 and maintain social order in a highly complex environment. Additionally, the PNC has implemented various strategies for controlling citizen security in many areas of the country. These include strengthening operational plans for reducing crime and implementing new models to anticipate situations that pose threats to citizen security.

The decline in the number of arrests for other crimes is related to the observed decline in crime reports. Fewer crimes lead to fewer arrests. However, other factors may explain the observed impact on police operations. To reduce contagion in the ranks and ensure the continuity of essential police services, PNC reduced the personnel assigned to surveillance and other operations. Together with the requirement for officers to supervise the quarantine, these measures may have affected their response capability. The pandemic has affected the criminal justice system, of which the police are a part, impacting police operations. For example, many of the country's detention centers restricted inmates' access, and judicial procedures for arrests added sanitary measures. These changes may have caused difficulties and delays in arrests.

The patterns observed in crime dynamics and police operations in Colombia over these months suggest certain areas of action and strengthening for the police, regional and local governments, and the criminal justice system. Likewise, this exercise—a first in Latin America—can be a helpful reference for other countries of the region in orienting the following lines of action:

- The heterogeneity of the crime dynamics across regions confirms the need to carry out targeted efforts of criminal investigation. Understanding why the number of homicides has fallen during the quarantine in some regions but not in others warrants further research. This analysis should be the basis for designing specific prevention, investigation, and operational strategies for the different realities throughout the territory. This principle should transcend the health emergency context and continue to be at the core of police plans and strategies going forward.
- The pandemic and social confinement measures have caused the police to expand law enforcement services and incorporate health emergency prevention and control actions. In a context of limited resources, adding new activities reduces the attention given to other activities. Moreover, the change in activities involves a new type of interaction between law enforcement and the citizenry that may affect this relationship, fundamental for good social

coexistence. These two factors make it necessary to carefully monitor the police action to control quarantine measures and consider whether local governments can lead some of these activities.

- The health emergency's disruption of some criminal value chains has created an opportunity to achieve long-term structural changes. The pandemic has given rise to a momentary pause in some markets and activities, which are gradually reactivating. This context may favor the identification of key actors in certain criminal value chains. Timely action taken on specific links of the chain would enable disruptions of criminal dynamics in the long term.
- Data analytics is a crucial tool for guiding and validating the planning of strategies of citizen security. Data analysis allows the detection of systematic patterns in criminal dynamics to design targeted actions and potentially evaluate the effectiveness of the implemented strategies. However, taking optimal advantage of data analytics requires greater coordination among the criminal justice system institutions and other government agencies. These limitations are reflected, for instance, in the decision to exclude certain offenses from this analysis. Offenses such as domestic violence are often not reported to the police, and therefore reports show only a small fraction of the incidents. In these cases, the information gleaned from calls or messages to hotlines and victim services should supplement the information in police reports. However, this information is neither centralized nor recorded in a homogeneous way throughout the country. Advances in the management of an evidence-based security system require mechanisms for communication between police information systems and those of other agencies, including databases administered by regional and local authorities.

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## Annexes

### Annex A Descriptive Statistics

**Table A.1. Descriptive Statistics of the Database**

	Pre-quarantine mean	Mean	Standard deviation	Min.	Max.
<i>A: Total</i>					
Homicides	0.031	0.029	0.239	0.000	25
Vehicle Theft	0.026	0.023	0.372	0.000	22
Arrests: Homicidal Violence	0.097	0.086	0.712	0.000	58
Arrests: Public Health	2e-04	0.011	0.287	0.000	33
Arrests: Thefts	0.123	0.105	1.481	0.000	96
Arrests: Other	0.357	0.306	1.481	0.000	96
Battery	0.289	0.251	2.089	0.000	211
Other Theft	1.441	1.239	16.106	0.000	924
2018 Population		43,011	253,713	279	7,412,566
2019 Homicide Rate		25.875	33.954	0.000	315.235
2018 MPI		41.792	17.338	4.500	98.500
<i>B: Rural</i>					
Homicides	0.011	0.010	0.115	0.000	8
Vehicle Theft	0.003	0.002	0.050	0.000	2
Arrests: Homicidal Violence	0.012	0.012	0.146	0.000	13
Arrests: Public Health	5e-05	0.002	0.103	0.000	33
Arrests: Thefts	0.007	0.006	0.112	0.000	10
Arrests: Other	0.065	0.060	0.112	0.000	10
Battery	0.023	0.021	0.181	0.000	23
Other Theft	0.096	0.084	0.480	0.000	30
<i>C: Urban</i>					
Homicides	0.020	0.019	0.201	0.000	20
Vehicle Theft	0.023	0.021	0.365	0.000	22
Arrests: Homicidal Violence	0.085	0.075	0.693	0.000	58
Arrests: Public Health	1e-04	0.009	0.264	0.000	28
Arrests: Thefts	0.116	0.099	1.472	0.000	96
Arrests: Other	0.292	0.246	1.472	0.000	96
Battery	0.262	0.227	2.038	0.000	205
Other Theft	1.343	1.153	15.951	0.000	906

**Table A.1. Descriptive Statistics of the Database (*continued*)**

	Pre-quarantine mean	Mean	SD	Min.	Max.
<i>D: Men</i>					
Homicides	0.028	0.027	0.220	0.000	18
Vehicle Theft	0.020	0.018	0.301	0.000	18
Arrests: Homicidal Violence	0.087	0.078	0.628	0.000	45
Arrests: Public Health	2e-04	0.010	0.243	0.000	27
Arrests: Thefts	0.104	0.089	1.178	0.000	76
Arrests: Other	0.324	0.277	1.178	0.000	76
Battery	0.159	0.140	1.154	0.000	126
Other Theft	0.627	0.543	7.711	0.000	443
<i>E: Women</i>					
Homicides	0.003	0.002	0.052	0.000	3
Vehicle Theft	0.005	0.005	0.101	0.000	10
Arrests: Homicidal Violence	0.010	0.009	0.139	0.000	14
Arrests: Public Health	3e-05	0.001	0.069	0.000	15
Arrests: Thefts	0.020	0.016	0.34	0.000	27
Arrests: Other	0.033	0.029	0.34	0.000	27
Battery	0.127	0.108	0.978	0.000	80
Other Theft	0.459	0.385	5.593	0.000	411

**Table A.2. Descriptive Statistics of the Database by Region**

	Pre- quarantine mean	Mean	SD	Min.	Max.
<i>A: Región Caribe (n = 197)</i>					
Homicides	0.031	0.029	0.200	0.000	5
Vehicle Theft	0.014	0.012	0.123	0.000	4
Arrests: Homicidal Violence	0.127	0.112	0.627	0.000	22
Arrests: Public Health	3e-04	0.020	0.440	0.000	28
Arrests: Thefts	0.109	0.092	0.572	0.000	19
Arrests: Other	0.363	0.310	0.572	0.000	19
Battery	0.280	0.237	1.215	0.000	65
Other Theft	1.129	0.980	4.774	0.000	187
2018 Population		54,717	130,804	3,498	1,206,319
2019 Homicide Rate		17.964	18.092	0.000	157.362
2018 MPI		51.086	13.587	13.700	92.200
% Rural Population 2018		0.442	0.237	0.001	0.953
<i>B: Región Centro Oriente (n = 367)</i>					
Homicides	0.017	0.017	0.221	0.000	25
Vehicle Theft	0.033	0.030	0.530	0.000	22
Arrests: Homicidal Violence	0.098	0.087	0.990	0.000	58
Arrests: Public Health	4e-04	0.007	0.236	0.000	28
Arrests: Thefts	0.190	0.162	2.459	0.000	96
Arrests: Other	0.288	0.248	2.459	0.000	96
Battery	0.333	0.291	3.172	0.000	211
Other Theft	2.010	1.731	26.292	0.000	924
2018 Population		41,486	390,830	1,097	7,412,566
2019 Homicide Rate		11.78	20.724	0.000	179.151
2018 MPI		35.863	14.454	6.700	73.500
% Rural Population 2018		0.629	0.223	0.003	0.966
<i>C: Región Eje Cafetero (n = 178)</i>					
Homicides	0.045	0.042	0.251	0.000	7
Vehicle Theft	0.026	0.024	0.255	0.000	9
Arrests: Homicidal Violence	0.104	0.095	0.534	0.000	22
Arrests: Public Health	0.000	0.016	0.317	0.000	25
Arrests: Thefts	0.110	0.095	0.736	0.000	24
Arrests: Other	0.744	0.625	0.736	0.000	24
Battery	0.292	0.256	1.315	0.000	68
Other Theft	1.540	1.318	9.932	0.000	284
2018 Population		49,936	192,226	2,607	2,427,129
2019 Homicide Rate		46.705	47.730	0.000	315.235
2018 MPI		35.719	14.486	4.500	81.500
% Rural Population 2018		0.499	0.210	0.018	0.931

**Table A.2. (Cont'd.) Descriptive Statistics of the Database by Region**

	Pre- quarantine mean	Mean	SD	Min.	Max.
<i>D: Región Pacífico (n = 178)</i>					
Homicides	0.058	0.057	0.357	0.000	12
Vehicle Theft	0.047	0.042	0.455	0.000	18
Arrests: Homicidal Violence	0.100	0.089	0.582	0.000	23
Arrests: Public Health	0.000	0.008	0.185	0.000	15
Arrests: Thefts	0.081	0.068	0.519	0.000	21
Arrests: Other	0.277	0.242	0.519	0.000	21
Battery	0.298	0.258	1.595	0.000	70
Other Theft	1.326	1.127	8.599	0.000	267
2018 Population		45,538	173,880	3,174	2,227,642
2019 Homicide Rate		43.223	43.208	0.000	276.833
2018 MPI		43.988	19.376	11.500	90.600
% Rural Population 2018		0.630	0.239	0.025	0.961
<i>E: Región Sur Oriente (n = 202)</i>					
Homicides	0.018	0.017	0.147	0.000	6
Arrests: Homicidal Violence	0.058	0.051	0.317	0.000	9
Arrests: Public Health	5e-05	0.008	0.217	0.000	33
Arrests: Other	0.206	0.182	0.393	0.000	16
Battery	0.209	0.182	0.860	0.000	31
Other Theft	0.724	0.627	3.111	0.000	78
2018 Population		26,035	60,517	279	531,275
2019 Homicide Rate		25.555	24.563	0.000	106.952
2018 MPI		46.919	19.575	14.800	98.500
% Rural Population 2018		0.564	0.236	0.042	1



**Table A.3. Descriptive Statistics of the Database by Poverty Quartiles**

	Pre- quarantine mean	Mean	SD	Min.	Max.
<i>A: Low poverty (n = 281)</i>					
Homicides	0.071	0.068	0.401	0.000	25
Vehicle Theft	0.091	0.082	0.732	0.000	22
Arrests: Homicidal Violence	0.284	0.25	1.346	0.000	58
Arrests: Public Health	4e-04	0.029	0.496	0.000	33
Arrests: Thefts	0.428	0.364	2.925	0.000	96
Arrests: Other	1.071	0.903	2.925	0.000	96
Battery	0.907	0.785	4.077	0.000	211
Other Theft	5.134	4.413	31.929	0.000	924
2018 Population		113,965	497,458	1,097	7,412,566
2019 Homicide Rate		22.790	25.504	0.000	150.951
2018 MPI		20.985	6.270	4.500	30.200
% Rural Population 2018		0.395	0.240	0.001	0.966
<i>B: Medium-low poverty (n = 277)</i>					
Homicides	0.015	0.014	0.134	0.000	5
Vehicle Theft	0.005	0.004	0.071	0.000	3
Arrests: Homicidal Violence	0.042	0.038	0.266	0.000	10
Arrests: Public Health	4e-05	0.007	0.187	0.000	25
Arrests: Thefts	0.034	0.029	0.252	0.000	11
Arrests: Other	0.156	0.140	0.252	0.000	11
Battery	0.110	0.096	0.449	0.000	17
Other Theft	0.324	0.278	1.414	0.000	60
2018 Population		19,345	38,377	1,118	490,075
2019 Homicide Rate		25.931	37.816	0.000	276.833
2018 MPI		35.232	3.113	30.300	40.700
% Rural Population 2018		0.56	0.202	0.018	0.959

**Table A.3. (Cont'd.) Descriptive Statistics of the Database by Poverty Quartiles**

	Pre-quarantine mean	Mean	SD	Min.	Max.
<i>C: Medium-high poverty (n = 283)</i>					
Homicides	0.018	0.018	0.155	0.000	9
Vehicle Theft	0.004	0.003	0.061	0.000	3
Arrests: Homicidal Violence	0.037	0.034	0.248	0.000	13
Arrests: Public Health	2e-04	0.005	0.159	0.000	20
Arrests: Thefts	0.022	0.019	0.192	0.000	16
Arrests: Other	0.122	0.110	0.192	0.000	16
Battery	0.085	0.075	0.369	0.000	16
Other Theft	0.204	0.178	0.798	0.000	23
2018 Population		19,246	28,521	1,307	308,188
2019 Homicide Rate		25.533	31.429	0.000	218.997
2018 MPI		46.061	3.404	40.800	52.600
% Rural Population 2018		0.609	0.210	0.059	0.961
<i>D: High poverty (n = 281)</i>					
Homicides	0.018	0.018	0.155	0.000	8
Vehicle Theft	0.003	0.002	0.053	0.000	4
Arrests: Homicidal Violence	0.025	0.024	0.218	0.000	18
Arrests: Public Health	2e-04	0.003	0.145	0.000	24
Arrests: Thefts	0.009	0.008	0.125	0.000	8
Arrests: Other	0.078	0.070	0.125	0.000	8
Battery	0.053	0.046	0.285	0.000	26
Other Theft	0.094	0.082	0.473	0.000	65
2018 Population		19,320	23,923	279	253,637
2019 Homicide Rate		29.247	39.237	0.000	315.235
2018 MPI		64.768	10.87	52.700	98.500
% Rural Population 2018		0.69	0.201	0.077	1

**Table A.4. Descriptive Statistics of the Database by PDET and PNIS Divisions**

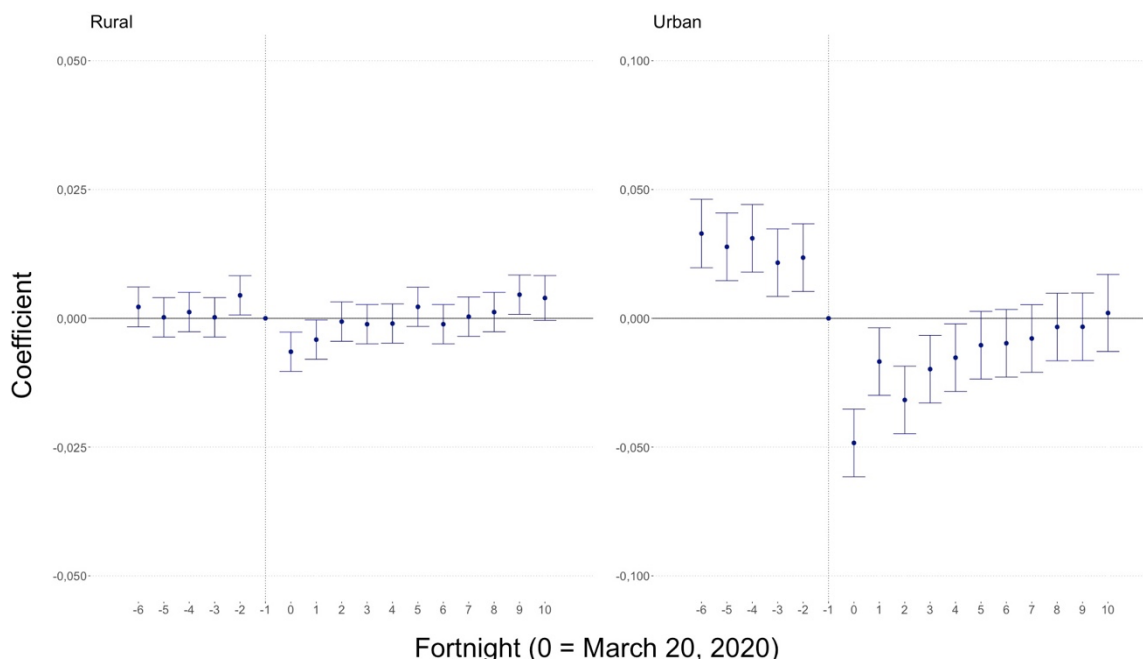
	Pre-quarantine mean	Mean	SD	Min.	Max.
<i>A: PDET Municipalities (n = 170)</i>					
Homicides	0.052	0.050	0.262	0.000	8
Vehicle Theft	0.010	0.009	0.103	0.000	4
Arrests: Homicidal Violence	0.069	0.062	0.355	0.000	18
Arrests: Public Health	8e-05	0.006	0.209	0.000	25
Arrests: Thefts	0.048	0.042	0.322	0.000	19
Arrests: Other	0.222	0.196	0.322	0.000	19
Battery	0.163	0.144	0.624	0.000	27
Other Theft	0.539	0.463	2.128	0.000	51
2018 Population		37,835	61,919	3,174	499,192
2019 Homicide Rate		56.177	53.231	0.000	315.235
2018 MPI		53.667	13.899	18.900	85.300
% Rural Population 2018		0.566	0.224	0.088	0.961
<i>B: Non-PDET Municipalities (n = 952)</i>					
Homicides	0.027	0.026	0.235	0.000	25
Vehicle Theft	0.029	0.025	0.401	0.000	22
Arrests: Homicidal Violence	0.102	0.091	0.758	0.000	58
Arrests: Public Health	2e-04	0.012	0.298	0.000	33
Arrests: Thefts	0.137	0.116	1.602	0.000	96
Arrests: Other	0.381	0.326	1.602	0.000	96
Battery	0.312	0.270	2.252	0.000	211
Other Theft	1.602	1.378	17.458	0.000	924
2018 Population		43,935	274,180	279	7,412,566
2019 Homicide Rate		20.464	25.728	0.000	186.283
2018 MPI		39.672	17.032	4.500	98.500
% Rural Population 2018		0.563	0.242	0.001	1

**Table A.4. (Cont'd.) Descriptive Statistics of the Database by PDET and PNIS Divisions**

	Pre- quarantine mean	Mean	SD	Min.	Max.
<i>C: PNIS Municipalities (n = 56)</i>					
Homicides	0.058	0.056	0.288	0.000	8
Vehicle Theft	0.011	0.010	0.112	0.000	4
Arrests: Homicidal Violence	0.065	0.057	0.346	0.000	18
Arrests: Public Health	2e-04	0.009	0.193	0.000	20
Arrests: Thefts	0.028	0.025	0.213	0.000	6
Arrests: Other	0.216	0.195	0.213	0.000	6
Battery	0.121	0.109	0.476	0.000	26
Other Theft	0.300	0.254	0.889	0.000	38
2018 Population		33,719	37,438	6,771	253,637
2019 Homicide Rate		63.282	58.043	5.503	315.235
2018 MPI		50.373	12.259	21.600	91.400
% Rural Population 2018		0.585	0.187	0.234	0.960
<i>D: Non-PNIS Municipalities (n = 1,066)</i>					
Homicides	0.029	0.028	0.236	0.000	25
Vehicle Theft	0.027	0.024	0.381	0.000	22
Arrests: Homicidal Violence	0.099	0.088	0.726	0.000	58
Arrests: Public Health	2e-04	0.011	0.291	0.000	33
Arrests: Thefts	0.128	0.109	1.519	0.000	96
Arrests: Other	0.365	0.312	1.519	0.000	96
Battery	0.298	0.258	2.14	0.000	211
Other Theft	1.501	1.291	16.521	0.000	924
2018 Population		43,499	260,141	279	7,412,566
2019 Homicide Rate		23.91	31.017	0.000	276.833
2018 MPI		41.342	17.448	4.500	98.500
% Rural Population 2018		0.563	0.242	0.001	1

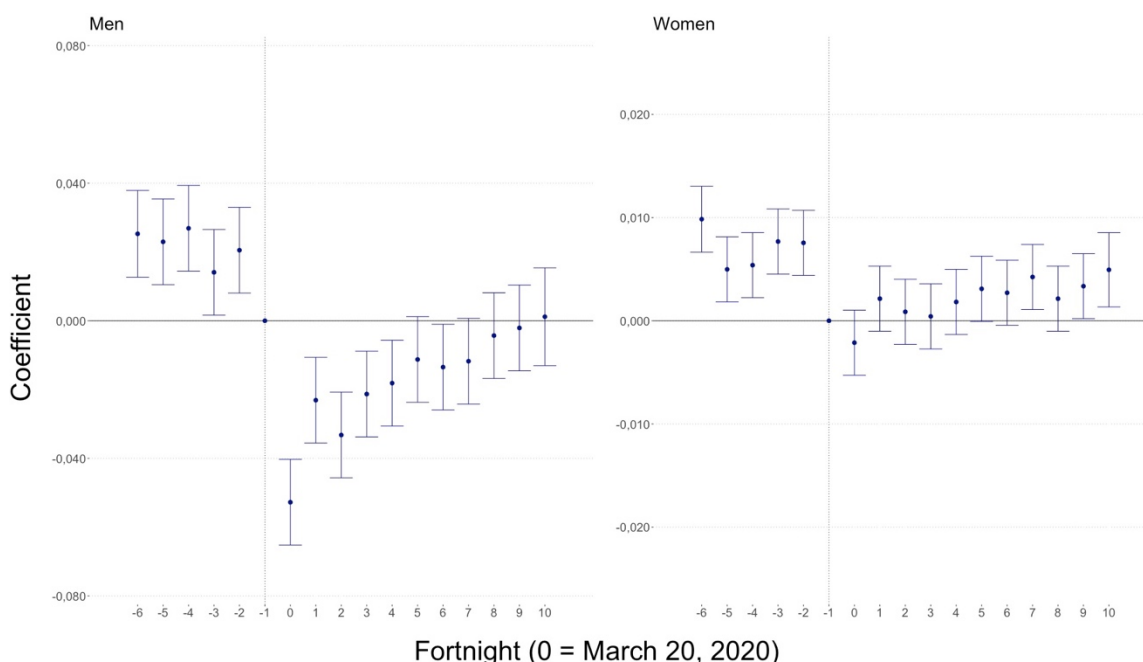
## Annex B Complete Sample of Municipalities

**Figure B.1. Effect of Confinement on Arrests for Homicidal Violence in Each Zone**



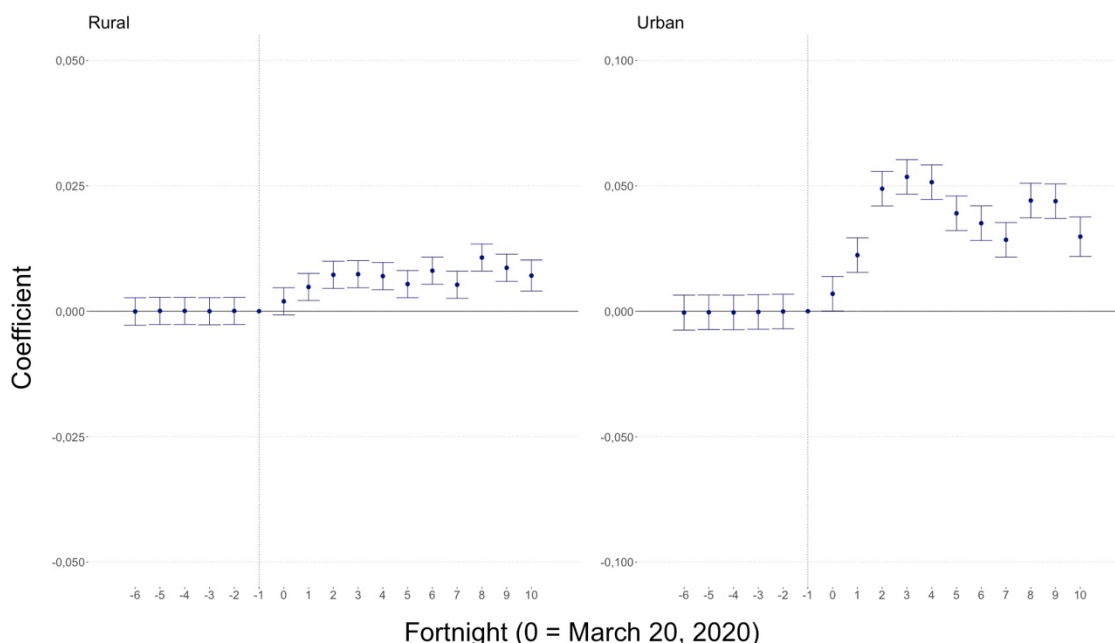
Notes: Authors' calculations based on SIEDCO data. The model includes day-of-the-week, week-of-the-year, department, and year fixed effects. The bands represent 90 percent confidence intervals.

**Figure B.2. Effect of Confinement on Arrests for Homicidal Violence by Gender**



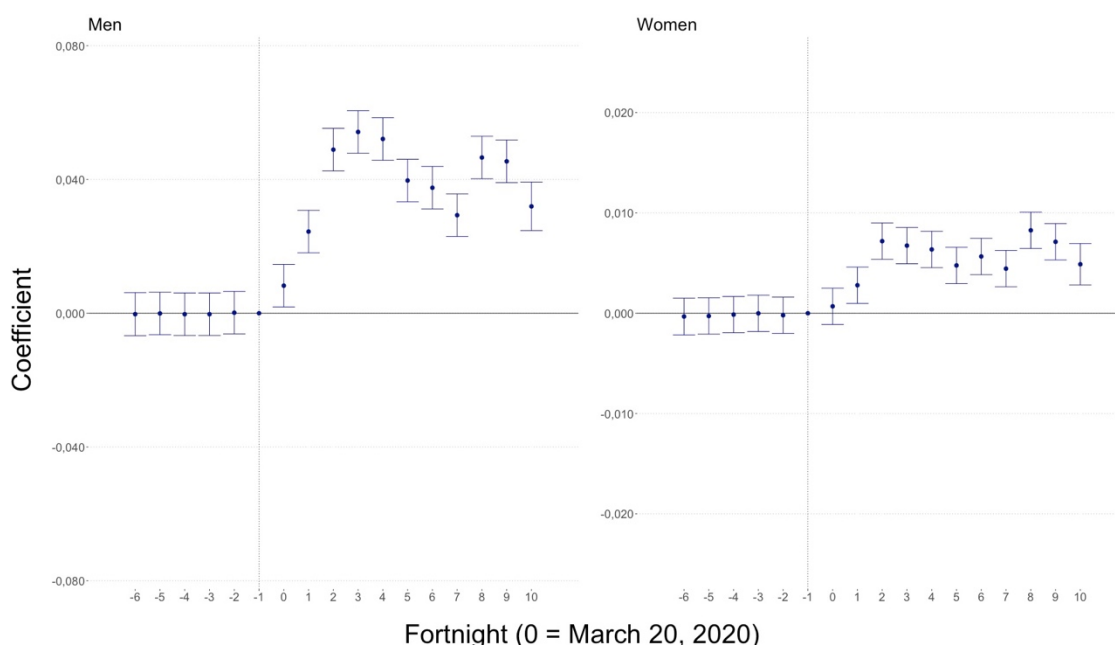
Notes: Authors' calculations based on SIEDCO data. The model includes day-of-the-week, week-of-the-year, department, and year fixed effects. The bands represent 90 percent confidence intervals.

**Figure B.3. Effect of Confinement on Arrests for Public Health Offenses by Zone**



Notes: Authors' calculations based on SIEDCO data. The model includes day-of-the-week, week-of-the-year, department, and year fixed effects. The bands represent 90 percent confidence intervals.

**Figure B.4. Effect of Confinement on Arrests for Public Health Offenses by Gender**



Notes: Authors' calculations based on SIEDCO data. The model includes day-of-the-week, week-of-the-year, department, and year fixed effects. The bands represent 90 percent confidence intervals.

## Annex C Result of Poisson Regression Model Estimate

**Table C.1. Effect of Confinement on Certain Offenses and Operational Results of 1,122 Municipalities**

	Total [S.E.] % Variation (1)	Rural [S.E.] % Variation (2)	Zone Urban [S.E.] % Variation (3)	Gender Males [S.E.] % Variation (4)	Females [S.E.] % Variation (5)
<i>A: Main Offenses</i>					
Homicides	-0.170*** [0.034] -15.7%	-0.145** [0.057] -13.5%	-0.185*** [0.042] -16.9%	-0.165*** [0.036] -15.2%	-0.228* [0.118] -20.4%
Vehicle Theft	-0.575*** [0.038] -43.7%	-0.602*** [0.119] -45.2%	-0.576*** [0.040] -43.8%	-0.624*** [0.043] -46.4%	-0.403*** [0.084] -33.2%
<i>B: Operational Results</i>					
Arrests: Homicidal Violence	-0.577*** [0.019] -43.9%	-0.206*** [0.051] -18.6%	-0.641*** [0.021] -47.3%	-0.572*** [0.020] -43.6%	-0.627*** [0.061] -46.6%
Arrests: Public Health	- - -	- - -	- - -	- - -	- - -
Arrests: Thefts	-0.812*** [0.018] -55.6%	-0.348*** [0.071] -29.4%	-0.844*** [0.019] -57.0%	-0.790*** [0.019] -54.6%	-0.948*** [0.047] -61.2%
Arrests: Other	-0.862*** [0.010] -57.7%	-0.532*** [0.022] -41.3%	-0.963*** [0.012] -61.8%	-0.862*** [0.011] -57.8%	-0.859*** [0.034] -57.7%
<i>C: Other Offenses</i>					
Battery	-0.665*** [0.012] -48.6%	-0.390*** [0.039] -32.3%	-0.695*** [0.012] -50.1%	-0.647*** [0.016] -47.6%	-0.708*** [0.018] -50.7%
Other Theft	-0.784*** [0.005] -54.4%	-0.629*** [0.020] -46.7%	-0.799*** [0.006] -55.0%		
No. of Municipalities	1,122	1,122	1,122	1,122	1,122
Comments	514,998	514,998	514,998	514,998	514,998
EF Day	Yes	Yes	Yes	Yes	Yes
EF Week	Yes	Yes	Yes	Yes	Yes
EF Department	Yes	Yes	Yes	Yes	Yes

Notes: S.E. refers to standard error. When using information for Bogotá, the model includes indicator variables ("dummies") to keep track of the deaths in the prison facility La Modelo in 2020 and the assault on the cadet school in 2019. Asterisks in the table indicate that the result is statistically significant at 90 percent confidence (\*), 95 percent confidence (\*\*), and 99 percent confidence (\*\*\*).

**Table C.2. Effect of Confinement on Offenses and Operational Results by Region  
(Poisson Regression Model)**

	Caribe [S.E.] % Variation (1)	Centro Oriente [S.E.] % Variation (2)	Eje Cafetero [S.E.] % Variation (3)	Pacífico [S.E.] % Variation (4)	Sur Oriente [S.E.] % Variation (5)
<i>A: Main Offenses</i>					
Homicides	-0.157* [0.081] -14.5%	-0.145* [0.08] -13.5%	-0.349*** [0.071] -29.4%	-0.101 [0.062] -9.6%	-0.082 [0.103] -7.9%
Vehicle Theft	-0.996*** [0.129] -63.1%	-0.527*** [0.058] -41.0%	-0.467*** [0.092] -37.3%	-0.579*** [0.072] -44.0%	-0.599** [0.24] -45.1%
<i>B: Operational Results</i>					
Arrests: Homicidal Violence	-0.655*** [0.041] -48.1%	-0.651*** [0.033] -47.9%	-0.412*** [0.046] -33.7%	-0.519*** [0.048] -40.5%	-0.55*** [0.06] -42.3%
Arrests: Public Health	- - -	- - -	- - -	- - -	- - -
Arrests: Thefts	-0.923*** [0.046] -60.3%	-0.765*** [0.025] -53.5%	-0.742*** [0.047] -52.4%	-0.985*** [0.058] -62.7%	-0.826*** [0.058] -56.2%
Arrests: Other	-0.993*** [0.025] -63.0%	-0.811*** [0.02] -55.5%	-1.015*** [0.019] -63.8%	-0.666*** [0.029] -48.6%	-0.581*** [0.031] -44.1%
<i>C: Other Offenses</i>					
Battery	-0.860*** [0.029] -57.7%	-0.654*** [0.019] -48.0%	-0.592*** [0.029] -44.7%	-0.571*** [0.029] -43.5%	-0.683*** [0.033] -49.5%
Other Theft	-0.678*** [0.014] -49.2%	-0.756*** [0.008] -53.1%	-0.829*** [0.013] -56.4%	-0.927*** [0.014] -60.4%	-0.781*** [0.018] -54.2%
No. of Municipalities	197	367	178	178	202
Comments	90,423	168,453	81,702	81,702	92,718
EF Day	Yes	Yes	Yes	Yes	Yes
EF Week	Yes	Yes	Yes	Yes	Yes
EF Department	Yes	Yes	Yes	Yes	Yes

Notes: S.E. refers to standard error. When using information for Bogotá, the model includes indicator variables ("dummies") to keep track of deaths in the prison facility La Modelo in 2020 and the assault on the cadet school in 2019. Asterisks in the table indicate that the result is statistically significant at 90 percent confidence (\*), 95 percent confidence (\*\*), and 99 percent confidence (\*\*\*).



**Table C.3. Effects of Confinement on Certain Offenses and Operational Results by Quartile according to the 2018 MPI (Poisson Regression Model)**

	Low [S.E.] % Variation (1)	Medium-Low [S.E.] % Variation (2)	Medium-High [S.E.] % Variation (3)	High [S.E.] % Variation (4)
<i>A: Main Offenses</i>				
Homicides	-0.152*** [0.045] -14.1%	-0.216** [0.098] -19.4%	-0.173** [0.087] -15.8%	-0.204** [0.087] -18.5%
Vehicle Theft	-0.550*** [0.04] -42.3%	-0.789*** [0.179] -54.6%	-0.642*** [0.207] -47.4%	-1.047*** [0.246] -64.9%
<i>B: Operational Results</i>				
Arrests: Homicidal Violence	-0.624*** [0.023] -46.4%	-0.452*** [0.057] -36.3%	-0.491*** [0.061] -38.8%	-0.454*** [0.072] -36.5%
Arrests: Public Health	- - -	- - -	- - -	- - -
Arrests: Thefts	-0.826*** [0.019] -56.2%	-0.852*** [0.068] -57.3%	-0.607*** [0.083] -45.5%	-0.609*** [0.125] -45.6%
Arrests: Other	-0.971*** [0.012] -62.1%	-0.675*** [0.03] -49.1%	-0.601*** [0.033] -45.2%	-0.518*** [0.042] -40.4%
<i>C: Other Offenses</i>				
Battery	-0.686*** [0.013] -49.6%	-0.598*** [0.037] -45.0%	-0.561*** [0.043] -42.9%	-0.615*** [0.054] -46.0%
Other Theft	-0.787*** [0.006] -54.5%	-0.846*** [0.023] -57.1%	-0.611*** [0.028] -45.7%	-0.798*** [0.041] -55.0%
No. of Municipalities	281	277	283	281
Comments	128,979	127,143	129,897	128,979
EF Day	Yes	Yes	Yes	Yes
EF Week	Yes	Yes	Yes	Yes
EF Department	Yes	Yes	Yes	Yes

Notes: S.E. refers to standard error. When using information for Bogotá, the model of includes indicator variables ("dummies") to keep track of deaths in the prison facility La Modelo in 2020 and the assault on the cadet school in 2019. Asterisks in the table indicate that the result is statistically significant at 90 percent confidence (\*), 95 percent confidence (\*\*), and 99 percent confidence (\*\*\*).

**Table C.4. Effect of Confinement on Certain Offenses and Operational Results by PDET and PNIS Divisions (Poisson Regression Model)**

	PDET [S.E.] % Variation (1)	Non-PDET [S.E.] % Variation (2)	PNIS [S.E.] % Variation (3)	Non-PNIS [S.E.] % Variation (4)
<i>A: Main Offenses</i>				
Homicides	-0.192*** [0.067] -17.4%	-0.163*** [0.039] -15.1%	-0.139 [0.109] -12.9%	-0.173*** [0.036] -15.9%
Vehicle Theft	-0.508*** [0.161] -39.8%	-0.579*** [0.039] -44.0%	-0.972*** [0.273] -62.2%	-0.567*** [0.039] -43.3%
<i>B: Operational Results</i>				
Arrests: Homicidal Violence	-0.518*** [0.058] -40.4%	-0.585*** [0.02] -44.3%	-0.556*** [0.105] -42.7%	-0.578*** [0.02] -43.9%
Arrests: Public Health	- - -	- - -	- - -	- - -
Arrests: Thefts	-0.759*** [0.073] -53.2%	-0.816*** [0.019] -55.8%	-0.213 [0.163] -19.2%	-0.820*** [0.018] -55.9%
Arrests: Other	-0.672*** [0.033] -48.9%	-0.884*** [0.011] -58.7%	-0.472*** [0.057] -37.6%	-0.876*** [0.011] -58.4%
<i>C: Other Offenses</i>				
Battery	-0.466*** [0.039] -37.2%	-0.684*** [0.012] -49.6%	-0.398*** [0.078] -32.9%	-0.671*** [0.012] -48.9%
Other Theft	-0.813*** [0.022] -55.6%	-0.782*** [0.006] -54.3%	-0.945*** [0.054] -61.1%	-0.783*** [0.005] -54.3%
No. of Municipalities	170	952	56	1066
Comments	78.030	436.968	25.704	489.294
EF Day	Yes	Yes	Yes	Yes
EF Week	Yes	Yes	Yes	Yes
EF Department	Yes	Yes	Yes	Yes

Notes: S.E. refers to standard error. When using information for Bogotá, the model includes indicator variables ("dummies") to keep track of deaths in the prison facility La Modelo in 2020 and the assault on the cadet school in 2019. Asterisks in the table indicate that the result is statistically significant at 90 percent confidence (\*), 95 percent confidence (\*\*), and 99 percent confidence (\*\*\*).