

# Empowering Migrant Women

## Regularization Programs and Crime

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## Abstract

Do undocumented forced migrants change their propensity to report or commit a crime when they are granted proper documentation, a job permit, and access to social services? This paper examines the impacts of a regularization program that granted temporary economic rights to over 281,000 undocumented Venezuelan forced migrants in Colombia. The program resulted in a general reduction in crimes committed by forced migrants, also while increasing the number

of domestic abuse and sex crimes female migrants reported. These findings suggest that empowerment and greater trust in local authorities are key mechanisms driving the behavioral changes for females, while proper enforcement facilitated by adequate documentation and the positive income effects of the program reduced the general propensity for migrants to commit crimes.

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# EMPOWERING MIGRANT WOMEN: REGULARIZATION PROGRAMS AND CRIME\*

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## I INTRODUCTION

The popular perception about crime and immigration is that they often move in the same direction (Butcher and Piehl 1998a; Bianchi et al. 2012; Spenkuch 2014a; Fasani et al. 2019; Bahar et al. 2020; Pinotti and Rozo 2022).<sup>1</sup> Additionally, research suggests that during episodes of forced immigration, migrants themselves tend to be victims of crime.<sup>2</sup> In these contexts, it is likely that the most vulnerable migrants, e.g., those who are undocumented and female, might not report crimes against them for fear that interactions with local authorities could result in punishment, discrimination, or deportation.<sup>3</sup> As such, a relevant question points to the effects of facilitating proper documentation and economic integration on undocumented forced migrant's propensity to commit and report crimes.

We address this question by studying whether a large regularization program of undocumented forced migrants prompted a change of migrant's behaviors in *reporting* or *committing* crimes. Our case study is Colombia, the current largest host of Venezuelan forced migrants.<sup>4</sup> The vast majority of them arrived in Colombia after 2016 as a result of Venezuela's political, economic, and humanitarian crises. In July 2018, Colombian President Juan Manuel Santos ordered the issuance of a regular migratory status known as Permiso Especial de Permanencia (henceforth PEP for brevity).

The PEP granted regular migratory status for two years to about 281,000 undocumented Venezuelan forced migrants in Colombia. It not only provided these immigrants with proper documentation and a job permit but also gave them the opportunity to receive a score on SISBEN, the mean proxy test used to award social support in Colombia. As such, the PEP enabled undocumented migrants to work in the formal sector and to access social services (including complete health services through the subsidized health regime).

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<sup>1</sup>For instance, at least 74 percent of Colombian natives believes that Venezuelan forced immigration exacerbates crime and insecurity (LAPOP, 2021; OXFAM, 2023).

<sup>2</sup>See recent evidence from Colombia by Knight and Tribin (2020) and Mexico by Rozo et al. (2021).

<sup>3</sup>See evidence by Horn (2010); Calderón et al. (2011); Wirtz et al. (2014); Kelly et al. (2199).

<sup>4</sup>According to the latest data from Colombian migration authorities, by 2022 the number of Venezuelans there numbered approximately 2.5 million people, or about 5% of Colombia's population.

We combine data from multiple sources to create a monthly-city level panel of *crime reports from migrant and host victims* and *crimes committed by migrants* for the largest urban centers in Colombia. To examine the effects of the PEP program we use a difference-in-differences specification, which compares crime in cities with different program take-up rates, before and after the program roll-out in August, 2018. We complement our analysis with event studies that examine the evolution of quarter-by-quarter crime outcomes in the main urban centers with different program take-up rates. The event studies support the validity of our identification strategy since we observe parallel trends before program implementation.

As a robustness test, we complement the difference-in-difference estimates exploiting the fact that each undocumented migrant eligible for the permit received a registry number exogenously allocated during registration. Based on this number, migrants could apply for (and subsequently get) the PEP migratory status in one of 22 time windows in late 2018. We use these assignments to estimate the average number of registration days available to undocumented immigrants in each city and use it as an instrumental variable for the program take-up rates. Our estimates are similar when employing the instrumental variables, reinforcing the validity of the difference-in-difference results. Additionally, our results are robust to multiple hypothesis testing, changes in geographic aggregation level (e.g., department-month aggregation instead of city-month aggregation), controls choice (e.g., dropping total crime controls), corrections on inference to a low number of clusters, and potential violations to the parallel trend assumption ([Bilinski and Hatfield, 2018](#)).

Our main analysis points to two key findings. First, places where more undocumented Venezuelan migrants applied for the PEP permit experienced an increase in total crime reports by Venezuelan migrants. These effects are explained by increments in reports of sex crimes and domestic violence, and they are entirely driven by female Venezuelans migrants, an especially vulnerable population. Notably, we find that Colombian cities

that had twice as many Venezuelan immigrants receiving a regular migratory status experienced an increase of 25 percent more crime reports. These effects are not explained by higher domestic violence caused by the PEP program. In fact, the improvements in economic and mental health conditions observed among PEP participants (Ibáñez et al., 2024) are inconsistent with patterns typically associated with increased domestic violence. Additionally, the program did not disproportionately increase female income relative to male income.

Particularly, a twofold increase in the number of Venezuelan migrants who received regular migratory status (relative to population) explains an increase of 40 percent and 70 percent in reports of sexual crimes and domestic violence, respectively. Given that the effects stem mostly from female Venezuelan migrant victims of crimes, it is plausible to conclude that these women felt more empowered to report such abuses without fear of deportation or other penalty. We support this hypothesis with data from a representative survey of Venezuelan refugees with and without the PEP that was collected as part of the Venezuelan Refugee Panel Study (VenRePs).<sup>5</sup> As we demonstrate, female migrants with the PEP increased the rate at which they filed complaints with the police and other institutions relative to their peers without the PEP. Additionally, and consistent with our main estimates, there was a mechanical increase in convictions and trials of male Venezuelan perpetrators of these crimes, who were likely partners of the victims.

Second, the program led to a reduction in total crime reports by Colombian natives and a decline in crimes committed by Venezuelans, excluding domestic and sexual crimes (which might be higher mechanically due to the increased reports). The results aligns with qualitative evidence from local officers suggesting that undocumented migrants were previously difficult to apprehend and prosecute due to legislative loopholes in the Colombian law. The regularization program addressed this gap, ensuring better enforcement of criminal laws. Moreover, documented increments in migrants' income and con-

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<sup>5</sup>Ibáñez et al. (2024) collected the data in 2021.

sumption caused by the program (Ibáñez et al., 2024) might have reduced crimes by improving economic opportunities. Together, these findings highlight the critical role of regularization programs like PEP in enhancing legal protections, reducing social tensions, and improving safety for both migrants and host communities. Our results are in line with declines in the crime rates of newly documented migrants in Italy, as shown by Pinotti (2017a).

Our results suggest that facilitating forced migrant's economic integration has powerful impacts that go beyond labor markets. For one, they affect migrant's willingness to cooperate with governments and make their basic human rights be respected. Such policies seem to be particularly relevant for vulnerable groups such as women who may be facing disproportionate domestic and sexual violence by staying undocumented. Moreover, ensuring proper documentations facilitates enforcement and increases income resulting in lower crime rates.

This study contributes to work examining the relationship between immigration and crime (Butcher and Piehl, 1998b; Borjas et al., 2010; Bianchi et al., 2012; Alonso-Borrego et al., 2012; Bell et al., 2013; Spenkuch, 2014b; Baker, 2017; Pinotti, 2017b; Freedman et al., 2018; Fasani, 2018; Fasani et al., 2019; Ajzenman et al., 2020; Knight and Tribin, 2020). Specifically, for Colombia, Knight and Tribin, 2020 investigate the connection between violent crime and immigration, using data from Colombian municipalities during the recent wave of immigration from Venezuela. The authors find that after the Colombian-Venezuelan border was closed and later re-opened in 2016—triggering a large influx of migrants—homicides in Colombia increased in areas near the Venezuelan border. This rise, however, was primarily driven by homicides involving Venezuelan victims, with no statistically significant increase in homicides targeting Colombians. While our study examines a related outcome, it departs from this body of work by focusing on the effects of a policy that improved the rights of undocumented migrants already residing in Colombia.

Rather than analyzing the impact of migrants arrival on crime rates, we explore how the enactment of a migration reform influenced migrants' behavior, particularly their willingness to commit and report crimes.

The papers most closely related to our work are [Comino et al. \(2020\)](#), [Jácome \(2022\)](#), and [Pearson \(2024\)](#), which analyze changes in crime reporting behaviors following programs that enhanced the rights of undocumented migrants in the United States.<sup>6</sup> Consistent with our findings, these studies show that improving rights for undocumented migrants increases their trust in and cooperation with local authorities, leading to higher rates of crime reporting. This effect is partly driven by a reduction in victims' fear of deportation ([Comino et al., 2020](#) and [Pearson, 2024](#)) and greater trust in law enforcement ([Jácome, 2022](#)).

Our study complements this literature in two important ways. First, while we also examine the effects of a regularization program that enhanced undocumented migrants' rights, our focus is on a developing country context, characterized by high levels of informality, widespread crime, and relatively low deportation rates. Unlike in the United States, undocumented migrants in Colombia are less likely to fear deportation, as they typically work in the informal sector with minimal detection risk. Since over 75 percent of forced migrants reside in developing countries, this context provides a critical perspective and highlights dynamics that may not translate directly from high-income countries.

Second, our analysis emphasizes gender dynamics and provides a more detailed view of the types of crimes affected by these programs—not only aggregated or property crime. We find that women, particularly victims of sexual crimes and domestic violence, are key drivers of the observed increase in crime reporting in developing countries. This insight is essential for understanding the victimization of vulnerable populations and for

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<sup>6</sup>[Comino et al. \(2020\)](#) examines the effects of the 1986 migratory amnesty, [Jácome \(2022\)](#) the effects of the 2015 Priority Enforcement Program, and [Pearson \(2024\)](#) the effects of the 2012 Deferred Action for Early Childhood Arrivals. Another close contribution is [Xie and Baumer \(2021\)](#), who offer a descriptive study using data from the National Crime Victimization Survey.

designing effective policy interventions. Similar increases in reporting among immigrant victims of domestic violence have been documented by [Amuedo-Dorantes and Arenas-Arroyo \(2022\)](#) and [Amuedo-Dorantes and Deza \(2022\)](#) in the United States following the implementation of sanctuary policies, which reduce local law enforcement’s cooperation with federal immigration authorities and limit deportation enforcement. Our findings demonstrate that granting rights, even in contexts where deportation risks are low, can foster institutional trust and improve reporting behaviors.

Our work also contributes to studies that explore the impacts of migration reforms in hosting countries ([Kossoudji and Cobb-Clark, 2002](#); [Bratsberg et al., 2002](#); [Orrenius and Zavodny, 2003](#); [Kaushal, 2006](#); [Amuedo-Dorantes et al., 2007](#); [Chassamboulli and Peri, 2015](#); [Devillanova et al., 2018](#); [Bahar et al., 2021](#)). While most of these papers assess the impacts of migration reforms on labor or political outcomes<sup>7</sup>, we focus on the behavior of the immigrants themselves as measured by crime reports. To some extent, crime reporting proxies the subsequent social empowerment of vulnerable migrant populations that results from receiving regular migratory status. In this context, our results have key policy implications by documenting large social benefits to such populations following a migratory amnesty, which in itself—according to previous literature—poses negligible costs to labor market outcomes for natives.

We also add to research on the assimilation and integration of migrants ([Abramitzky et al., 2014](#); [Bratsberg et al., 2014](#); [Abramitzky et al., 2019](#); [Harder et al., 2018](#); [Hainmueller et al., 2019](#); [Abramitzky et al., 2020](#); [Brell et al., 2020](#); [Pérez, 2021](#); [Ibáñez et al., 2024](#)). These studies mostly explore the assimilation of migrants into labor markets by estimating the convergence of wages, occupational sector, and education levels between first-generation and second-generation migrants and the local population. Although recent papers have identified mediating factors such as marriage decisions, language ability, and cultural

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<sup>7</sup>See [Bahar et al. \(2023\)](#) and [Rozo et al. \(2023\)](#) who examine the effects of the same program on firm development and electoral outcomes.

integration, the success of migrants also depends on trust in state institutions to which they apply for social services or to seek protection. We document that regularization empower migrants to request state action against crime, an important step toward social integration in receiving countries.

## II THE PROGRAM: THE PEP REGULARIZATION

Colombia has led regional efforts to regularize the status of Venezuelan forced migrants. As is typical in crisis-driven migration, a large share of Venezuelans who migrated to Colombia did so without a formal migratory process. Between April and June 2018, Colombian authorities at 1,109 authorized points in 413 municipalities registered undocumented Venezuelan immigrants (see Figure A1 in the Appendix). This registry, the *Registro Administrativo de Migrantes Venezolanos* or RAMV, conducted a massive public campaign to attract Venezuelan immigrants to register and self-report personal information such as name, date of birth, current address, municipality of origin in Venezuela, date of entry, education level, and job status, among others. It succeeded in registering 442,617 undocumented Venezuelans from 253,575 different households.

It is important to note that in advertising the RAMV, the government explicitly stated that registration would not result in deportations or other negative legal consequences. Yet, it did not promote the RAMV either as a path to work permits or other legal benefits to enhance the migrant experience. The program was advertised simply as a registry to count and identify migrants.<sup>8</sup>

However, in July 2018, just days before leaving office, outgoing President Juan Manuel Santos decreed that all Venezuelans who registered in the RAMV would be eligible for regular migratory status that would let them stay in Colombia and join the workforce. In particular, previously undocumented migrants who registered in RAMV could apply for the *Permiso Especial de Permanencia*, or PEP, a comprehensive two-year regular migra-

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<sup>8</sup>We subsequently spoke with government officials and confirmed that these were, in fact, their intentions at the time.

tory status that Colombia had previously granted to Venezuelan migrants. The difference between previous waves of PEP and this one (PEP) was that the latter was explicitly created for Venezuelans registered in the RAMV, and as such, focused on undocumented immigrants. According to the decree, these immigrants could request the PEP migratory status during the third quarter of 2018. Each migrant had a window of time in which to apply based on their RAMV registration number, which they received as their record was entered into the system in real time. This number was exogenously allocated to each immigrant across all the authorized points. By the end of that year, 281,307 of the 442,617 eligible individuals had applied for and received one.

According to the RAMV data described in Table 1, the migrants under consideration were young and had low levels of education: less than 10 percent of RAMV migrants were older than 60 years, and over 50 percent of this group had completed at least secondary education. This group was younger but slightly less educated than the Colombian labor force. According to 2018 population estimates, approximately 13.5 percent of the Colombian population was older than 60 years, and 61.5 percent of the active labor force in 2017 had completed at least basic secondary education. At the time of the RAMV survey, 46.3 percent of working-age migrants had some level of employment in the informal sector.

### III DATA

We exploit monthly and city variation in our estimates. The data we use can be grouped as follows:

1. *Crime reports by migrant victims.* We use individual level reports from victims from the Colombian National Police that include reports on all crimes denounced in Colombia between January 2017 and December 2019 (one year before and after the regularization program). They include information on the type of crime, the municipality of reporting, and the nationality and the gender of the individual who reported it. We construct crime counts on a monthly basis for each main city in

Table 1. Sociodemographic Characteristics of Migrants Who Registered in the RAMV

<i>Panel A. Age Groups</i>					
Variable	Total Obs.	Observations	Percentage	Average	STD
0-18 years	440,869	116,529	26.43%	7.64	4.94
18 - 30 years	440,869	167,743	38.05%	24.23	3.51
31 - 40 years	440,869	88,392	20.05%	35.07	2.84
41 - 50 years	440,869	44,568	10.11%	44.91	2.83
51 - 60 years	440,869	17,602	3.99%	54.6	2.76
61 - 70 years	440,869	4,948	1.12%	64.34	2.66
71 - 80 years	440,869	880	0.20%	74.2	2.7
≥ 80 years	440,869	207	0.05%	87.27	8.9
<i>Panel B. Individual Covariates</i>					
Variable	Total Obs.	Observations	Percentage	95% CI	
<i>Gender</i>					
Female	442,616	219,847	49.67%	49.52%	49.82%
Male	442,616	222,435	50.25%	50.11%	50.40%
Transgender	442,616	334	0.08%	0.07%	0.08%
<i>Household role</i>					
Head of Household	442,616	231,915	52.40%	52.25%	52.54%
<i>Marital Status</i>					
Single	442,617	279,956	63.25%	63.11%	63.39%
Married / Cohabiting	442,617	153,659	34.72%	34.58%	34.86
Divorced / Separated / Widowed	442,617	9,002	2.03%	1.99%	2.08%
<i>Level of Education</i>					
Preschool / Primary	442,617	150,884	34.09%	33.95%	34.23%
Secondary	442,617	221,319	50.00%	49.86%	50.15%
Tech School / University / Post Grad	442,617	70,414	15.91%	15.80%	16.02%
<i>Panel C. Household Covariates</i>					
Variable	Observations	Mean	STD	Min	Max
Number of family members	437,059	3.51	2.06	0	10
Number of relatives in Venezuela	435,758	2.56	2.72	0	14

Notes: The table depicts the descriptive statistics of Venezuelan migrants who registered in the Registro Administrativo de Migrantes Venezolanos (RAMV) Census.

the country. We aggregate data at the city-month level. By limiting crime reports to Venezuelans, we attempt to capture the effect of the regularization on the propensity of Venezuelan migrants to report crimes.

2. *Crimes perpetrated by migrants.* To examine changes in crime perpetrated by migrants we use data from the *Fiscalía General de la Nación*, Colombia’s Office of the Attorney General. The data set includes all criminal cases in Colombia that are in trial or have yielded convictions, including information on the year the crime occurred, the type of crime, and the gender, age, and nationality of the indicted individual between 2017 and 2021.<sup>9</sup> In the data, 97.11 percent of crimes (178,483) were committed by Colombian nationals and 2.8 percent (5,312) were committed by Venezuelan migrants.
3. *Registro Administrativo de Migrantes Venezolanos (RAMV).* We use administrative data sourced from the RAMV survey to compute the number of people eligible for the PEP migratory status and the actual number of individuals who applied for (and received) the PEP migratory status. Using individual records, we compute the allocated time window each individual had to register in the PEP (based on the registration number), which we use for our identification strategy.
4. *Municipality Controls.* We control for a rich set of baseline municipal covariates including night light density, variables related to internal conflict, GDP municipal composition, distance to the Venezuelan border, and number of Venezuelans with previous rollouts of PEP migratory status (particularly the PEP1 and PEP2), as well as proxies for government activity. Administrative information at the municipal level comes from the CEDE municipal panel, the Ministry of Defense, the National Planning Department, and DANE (Colombia’s national statistical agency). Night

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<sup>9</sup>The original data set had more information that we do not use in our effort to measure actual crimes. Thus, we exclude cases that were found not guilty, were in pretrial investigation (i.e., not enough evidence had been compiled to go to trial), were closed by the prosecutor, or suffered “procedural rupture” (according to Article 53 of the Code of Criminal Procedure).

light density comes from the National Oceanic and Atmospheric Administration.

Table 2 presents descriptive statistics for all the main variables in our analysis. Our sample includes 1,080 observations that correspond to the 30 municipalities that represent capital cities of most departments in Colombia and 36 months.<sup>10</sup> We focus on capital cities that host about two-thirds of all Venezuelans in our sample (e.g., using the locations reported in the RAMV data) in order to reduce possible biases in crime reporting due to internal conflict that still persists in rural areas (Ibañez et al., 2017). Yet, as a robustness test we also show that our main results hold for different levels of geographic aggregation (such as aggregating the data by department-month level) in Appendix B. A.

Panel A of Table 2 illustrates the total number of crimes reported; panel B the ones reported by *Venezuelans* in rates per 100,000 individuals. The rate of all crimes reported by Venezuelan migrants in our sample is 0.79 per 100,000 individuals (panel B). The most common crimes reported by Venezuelans is theft (0.44 per 100,000 individuals). These numbers are quite low, as expected—at the time, Venezuelans represented at most three percent of Colombia’s population, with heterogeneity in terms of locations, naturally. Yet, they have enough variation to exploit for our exercise. Indeed, given the high standard deviations relative to the mean, significant variation is evident across crime reports, cities, and months. Similar trends are observed for crimes perpetrated by Venezuelans (Panel C), where theft is also the most common crime.

In terms of the treatment variable, panel D of Table 2 shows that for the average city in our sample, there were 4,839 Venezuelans who received the PEP migratory status. That number, however, ranged between 13 and 35,729 across all cities in the sample. In proportion to the local population, the number of PEP migratory status awarded was, on average, 217.98 per 100,000 inhabitants. While the number of observations in this table is

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<sup>10</sup>Colombia has 32 departments; the panel only includes those 30 cities for which there were consistent monthly crime reports and control variables. The cities excluded did not had available data for all periods and the data was of low quality.

Table 2. Descriptive Statistics

Variable	Obs.	Average	SD	Min	Max
<i>Panel A: Total Crime Reports (rates per 100,000)</i>					
Homicides (per 100K)	1,080	1.99	1.81	0.00	18.97
Threats (per 100K)	1,080	12.00	8.46	0.00	52.82
Domestic Violence (per 100K)	1,080	20.82	13.42	0.00	98.67
Thefts (per 100K)	1,080	83.80	30.95	12.69	193.44
Sex Crimes (per 100K)	1,080	7.95	4.61	0.00	31.16
Total Crimes (per 100K)	1,080	127.17	40.56	40.49	266.15
<i>Panel B: Crime Reports by Venezuelan Victims (rates per 100,000)</i>					
Homicides (per 100K)	1,080	0.08	0.42	0.00	4.88
Threats (per 100K)	1,080	0.04	0.24	0.00	3.07
Domestic Violence (per 100K)	1,080	0.15	0.49	0.00	9.18
Thefts (per 100K)	1,080	0.44	0.90	0.00	14.65
Sex Crimes (per 100K)	1,080	0.08	0.42	0.00	6.12
Total Crimes (per 100K)	1,080	0.79	1.63	0.00	19.59
<i>Panel C: Crimes Perpetrated by Venezuelans (rates per 100,000)</i>					
Homicides (per 100K)	150	0.46	0.92	0.00	5.94
Threats (per 100K)	150	0.26	1.02	0.00	9.48
Domestic Violence (per 100K)	150	1.39	4.47	0.00	48.84
Theft (per 100K)	150	3.71	7.12	0.00	37.23
Sex Crimes (per 100K)	150	0.66	2.48	0.00	19.54
Total Crimes (per 100K)	150	6.48	11.65	0.00	78.15
<i>Panel E: Treatment and Other Migration Variables</i>					
PEP-RAMV holders	1,080	4,839.60	7,686.24	13.00	35,729
PEP holders per 100K (ages 10-64)	1,080	217.98	375.02	3.33	1,767.00
Venezuelan population 2005	1,080	676.83	1,171.58	0.00	4,578
Total population 2005	1,080	644,783	1,252,964	12,897	6,778,691
<i>Panel F: Control Variables (at baseline)</i>					
Night Light Density (2009)	30	12.73	14.47	0.03	53.98
Total Mun. Income (COP, Billions) (2009)	30	628.79	1,513.32	9.06	8,131.36
Mun. Public Expenditures (COP, Billions) (2009)	30	617.83	1,434.27	10.52	7,553.10
Total Central Gov. Transfers (COP, Billions) (2009)	30	222.60	381.46	4.98	2,048.44
Number of Financial Institutions (1995)	30	24.23	47.62	1.00	252.00
Number of Tax Collection Offices(1995)	30	8.87	18.93	1.00	99.00
Homicide Rate (Per 100,000 Indv.) (2009)	30	34.88	21.45	7.00	109.91
N. of Terrorist Attacks (1995)	30	0.07	0.37	0.00	2.00
Unsatisfied Basic Needs (UBN % Households) (2005)	30	27.46	17.76	9.16	89.51
Informal Labor* (% Households) (2005)	30	88.33	5.54	77.16	96.51
GDP Agriculture (COP, Billions) (2009)	30	53.79	42.21	4.50	145.92
GDP Industry (COP, Billions) (2009)	30	2,138.95	4,368.66	8.44	22,970.06
GDP Services (COP, Billions) (2009)	30	4,444.15	13,266.97	87.69	72,695.80
PEP1 (August 2017-October 2017)	30	1,777.50	5,133.56	0.00	27,703.00
PEP2 (February 2018-June 2018)	30	2,880.43	8,737.14	0.00	47,389.00
Inverse Distance to Closest Border Crossing	30	0.13	0.35	0.00	1.00

Notes: The table depicts the summary statistics of the main variables used in our study.

1,080, since this is the treatment variable, there is no across-time variation (as will be clear when we describe our empirical strategy).

Panel E presents summary statistics for all the different controls in our specifications for the 30 cities in our sample at baseline.<sup>11</sup>

Figure 1 visually represents these data on a map of Colombia. For each capital city, the figure plots the number of PEP holders per 100,000 inhabitants via the scale of the markers (circles). Using a light-to-dark color scale, it also shows the total crimes reported (per 100,000 inhabitants, for consistency) in the different cities. For visualization purposes, the color scale is represented in the departments where the capital cities are located. This graph shows a great deal of variation for both the treatment variable and the outcome under consideration. Figure 2 also illustrates a scatter plot in which each dot represents an urban centers in our sample. The scatter plot shows that there is a positive correlation between the PEP program take-up and the change in crime reports by Venezuelan migrants, before and after the PEP implementation. For completeness we also replicate the same Figure aggregating the data at the department level in Figure B1.

#### IV EMPIRICAL STRATEGY

Our main goal is to establish whether provision of the PEP program to previously undocumented migrants change crime reported or committed by Venezuelans. To do so, we compare cities with different PEP take-up rates, before and after they received this status. Effectively, we estimate a difference-in-differences specification as follows:

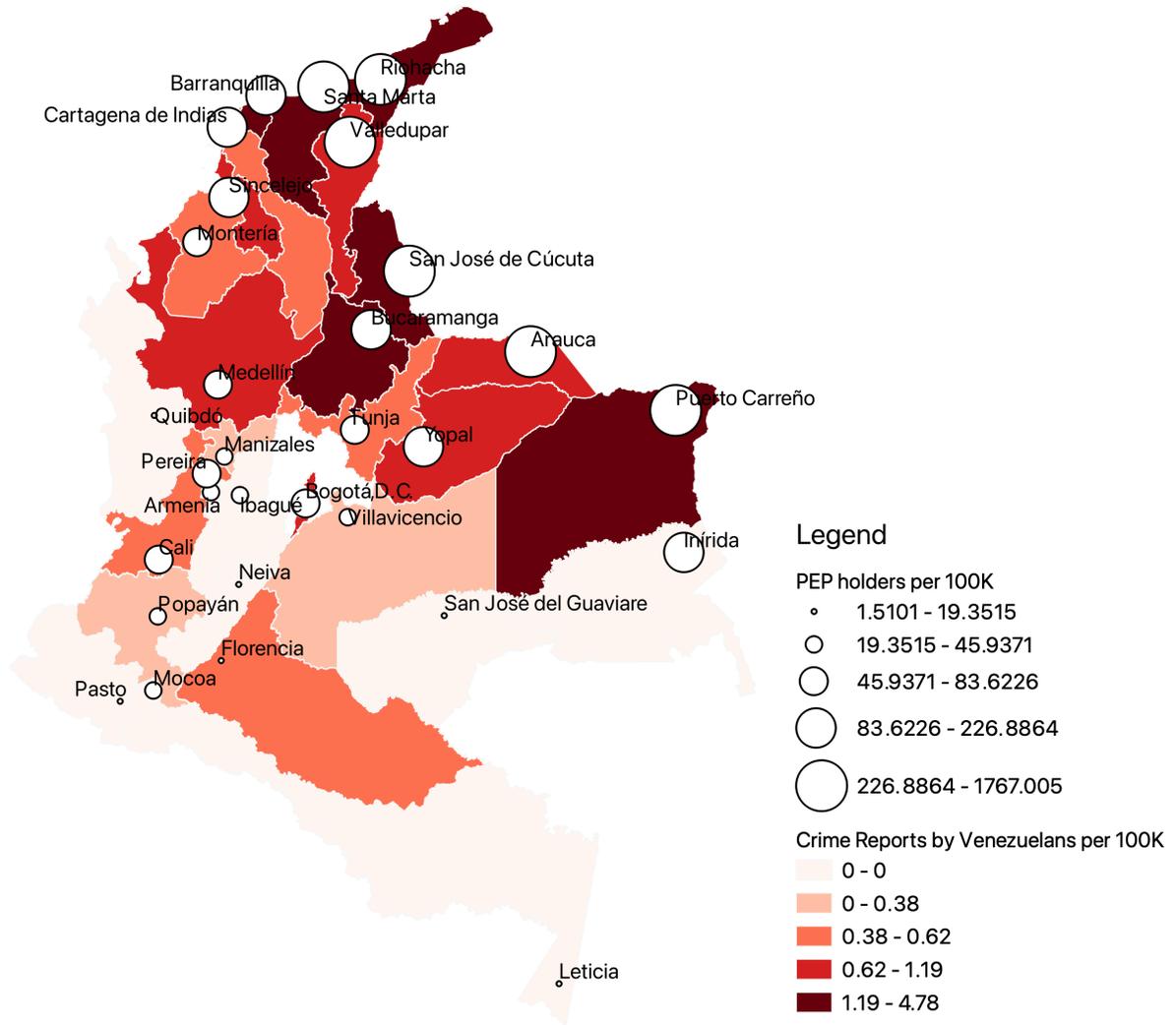
$$\text{Crime}_{ct} = \beta_{DID} PEP_c \times I[\text{Post Aug. 2018}]_t + \sum_{ccZ} \text{controls}_c \times \text{year}_t + \gamma_c + \eta_t + \varepsilon_{ct} \quad (1)$$

where  $c$  indexes city and  $t$  indexes time (month-year). Our main outcome variable is  $\text{Crime}_{ct}$ ,

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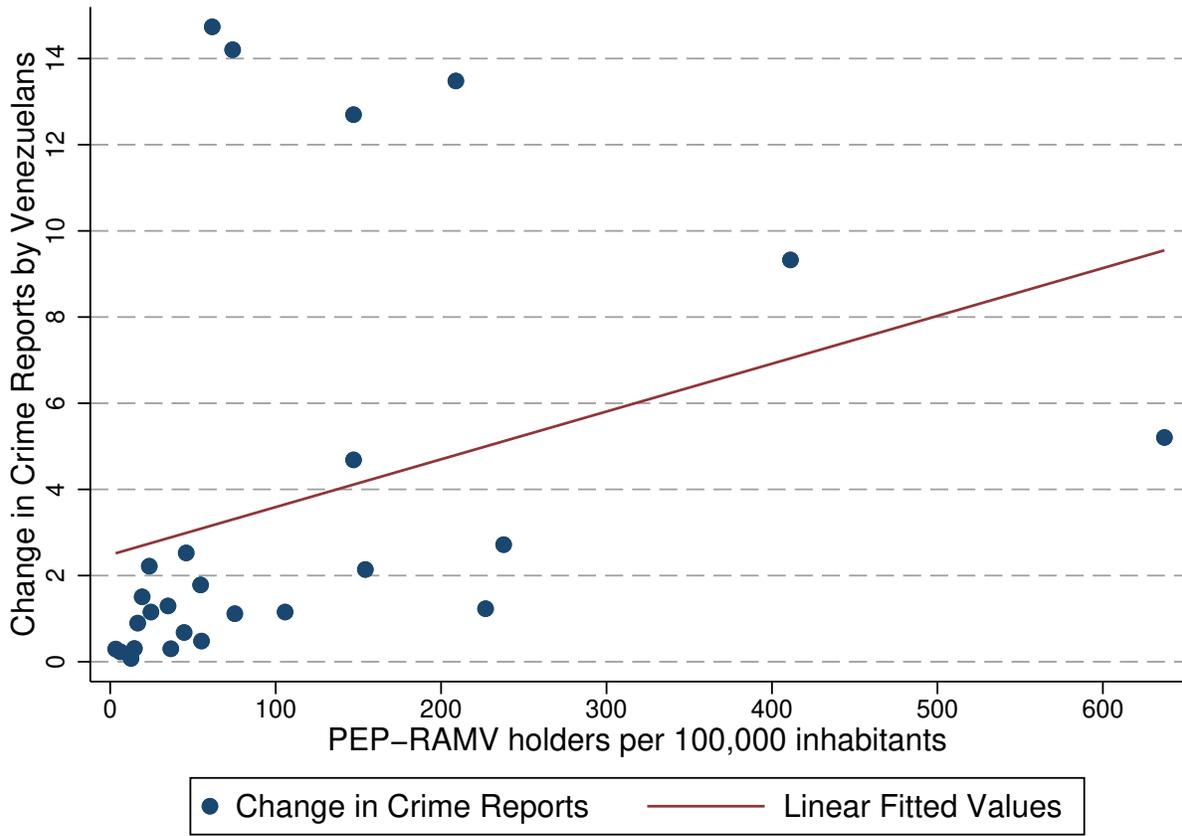
<sup>11</sup>All controls are measured at the municipality level.

Figure 1. Total Crime Reports by Venezuelans and PEP Holders (per 100K)



*Notes:* The figure plots the total crime reports by Venezuelans and the number of Venezuelan PEP holders per 100,000 inhabitants. The intensity of crime reports is represented by the color shades in the departments that correspond to capital cities, whereas the intensity of the treatment (PEP holders) is represented by the size of the marker for each city.

Figure 2. Change in Crime Reports before and after PEP Implementation



Notes: The figure shows the change in the average crime reports by Venezuelan migrants one year before, and after the PEP implementation by capital cities.

which is the rate of committed or reported crimes by Venezuelans in city  $c$  and month-year  $t$  per 100,000 inhabitants.  $PEP_c$  is the number of Venezuelans with the PEP migratory status per city  $c$  per 100,000 inhabitants,<sup>12</sup> interacted with a dummy that takes the value of one for all time periods after August 2018, when the PEP roll-out began. Our estimator of interest is  $\beta_{DID}$ . Concerning the time dimension, the coefficient can be interpreted as the average effect of the PEP program for all months in the sample after August 2018 (included) versus all the months before August 2018.

All continuous variables on the right-hand side, including the treatment variable, were transformed using the inverse hyperbolic sine transformation.<sup>13</sup> Thus we interpret  $\beta_{DID}$  as a semi-elasticity of crime reports with respect to the share of the population that received regular migratory status.

We also include a full set of predetermined municipal characteristics measured before the beginning of our period of analysis (to reduce endogeneity concerns), represented by the set  $Z$ . We interact these control variables with year dummies (denoted by  $year_t$ ) to flexibly account for potential differential non-parametric trends for each city  $c$  that could emerge from these variables as they explain crime reports by Venezuelans in ways that are correlated with the treatment. The variables included in  $Z$  are (1) percentage of households in Colombia in 2005 with at least one unsatisfied basic need; (2) percentage of households in Colombia the same year with at least one informal worker; (3) the number of terrorist attacks in 1995 (to proxy for the internal conflict); (4) night light density in 2009; (5) the number of financial institutions in 1995; (6) the number of tax collection offices in 1995; (7) agriculture, (8) industry, and (9) services GDP in 2009; (10) central government transfers in 2009; (11) total municipal expenditures in 2009; (12 and 13) the number of Venezuelans who received the two previous rounds of the PEP migratory status; and (14) the inverse distance to the closest of the five authorized crossing points between Venezuela and Colombia. The specification also includes fixed effects for city ( $\gamma_c$ ) and month-year ( $\eta_t$ ). Unless indicated, we cluster our standard errors at the city level to account for geographic serial correlation. Since we have a low number of clusters we also correct the standard errors using wild

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<sup>12</sup>Specifically, it corresponds to the number of PEP holders (between 10 and 64 years old) divided by the population between 10 and 64 years old, multiplied by 100,000.

<sup>13</sup>See [Burbidge et al. 1988](#) and [MacKinnon and Magee 1990](#) for more details on this transformation.

bootstrapping.

As a robustness test we also present results *controlling* for the total reports of crimes in that city and period. The idea behind including this control is that we want to estimate the effects of the program on the *crime report by migrants*, keeping constant the *overall number of crime reports*. Reassuringly our results remain robust with and without this control.

#### IV. A Addressing potential dynamic endogeneity

The validity of the main estimates described in equation 1 rests on the parallel dynamic behavior on the outcomes we examine for municipalities that had higher and lower PEP program take-up. Although evidence on the validity of this assumption will be illustrated in the next section, we also estimate a specification that was robust to dynamic individual responses to the program as a robustness test.

For this purpose, we follow our approach in [Bahar et al. \(2021\)](#). In particular, we employ an instrumental variable approach and estimate specification (1) through two-stages least squares (2SLS).<sup>14</sup> Our instrument is the average number of days undocumented Venezuelan migrants had to register for the PEP program in the last quarter of 2018. The number of days was defined randomly at the individual level by the form number of the registration in the RAMV survey. According to the government officials who oversaw this process, the local registration point gave this number to migrants in the order they arrived and registered. More importantly for us, the numbers did not correspond to any particular geographic or socioeconomic characteristics of the municipalities. The officials said they took this approach to scatter the applications to manage the administrative load and distribute it more evenly across locations. Based on the individual numbers for all PEP holders at the time of registration in a given municipality, we estimate the average registration days per municipality as:

$$\text{Reg. Days}_c = \sum_{j \in K} \frac{\text{RAMV registrants assigned to time window } j_c}{\text{Total RAMV registrants}_c} \times [\text{Days in time window } j] \quad (2)$$

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<sup>14</sup>It is common in the economics literature to apply instrumental variables in a difference-in-differences setting. As a pioneering example of combining these methods, see the seminal study by [Duflo \(2001\)](#).

where  $K$  represents each of the 22 possible individual time windows assigned to migrants in the RAMV to request a PEP migratory status, which ranged between 78 and 141 days.<sup>15</sup> Therefore,  $Reg.Days_c$  represents the average number of registration days available for the eligible population to receive the PEP in that city. Our identification strategy relies on the strong correlation between the length of the window to apply for the PEP amnesty and the number of people who actually applied (and received it). This is the case, as can be seen in a simple plot in Appendix Figure A3.

In addition, the exclusion restriction needs to hold in order for our instrument to be valid and to interpret our results as causal. That is, the effect of the time windows available to register for the PEP program in each municipality (exogenously assigned to migrants as they registered) affected crime reports by Venezuelans only through the actual number of Venezuelans who received the PEP migratory status. We believe this is a very reasonable assumption. Although the allocation of times to register was exogenous to the migrant, our identification relies on geographic variation of registration times across municipalities. Such variation exists due to the higher concentration of Venezuelans near the border, which means higher average registration times in border municipalities compared to areas further away with fewer migrants. This would threaten our identification strategy if there were other aspects of border proximity that could affect crime reports by Venezuelans through channels other than the regularization itself. Given the characteristics of the natural experiment we utilize, as well as all the controls in our specifications—including proxies for economic activity, sectoral distribution, public income and expenditures, governmental presence, crime, conflict, population poverty and vulnerability, informality, and distance to the border—it is reasonable to assume the exclusion restriction holds, especially since we control for distance to the border and the vast set of variables outlined above. Reassuringly, all our results are extremely similar when we use the 2SLS estimation suggesting that endogeneity was not biasing our coefficients in a substantial way.

## V IMPACTS OF THE PEP ON CRIME REPORTS

Our main results are in Table 3, which presents the OLS (panel A and C) and 2SLS (panel B and D) estimation of Equation (1). Panels A and B include controls for total crime and Panels C and

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<sup>15</sup>See Figure A2 in the Appendix for its distribution.

D exclude this control. All panels use as dependent variable the number of crime reports by Venezuelans per 100,000 inhabitants. Each column presents results for different types of crimes, which include homicides, threats, domestic violence, thefts, and sex crimes. Column (6) presents results for the aggregate of all crime reports by Venezuelans. The main variable of interest is in the first row, which corresponds to  $\beta^{DID}$  of specification (1). Standard errors clustered by city level are in parentheses and False Discovery Rates (FDR) q-values that correct for multiple hypothesis testing as well as p-values that correct for a small number of clusters obtained using wild bootstrapping are presented in brackets. To maximize statistical rigor, we only consider a coefficient statistically significant only if they remain valid in the 2SLS estimates after adjusting for multiple hypothesis testing and accounting for the small number of clusters.

Table 3. Impacts of the PEP Program on Crime Reports by Migrants

	Homicides (1)	Threats (2)	Domestic Viol. (3)	Thefts (4)	Sex Crimes (5)	Total Crimes (6)
<i>Panel A. OLS - Crime Reports by Venezuelans (rates per 100,000)</i>						
$PEP_c \times I[PostAugust2018]$	0.040*** (0.014)	0.018 (0.015)	0.034 (0.020)	0.043 (0.024)	0.021** (0.008)	0.087*** (0.024)
FDR q-values	[0.016]	[0.141]	[0.068]	[0.066]	[0.019]	[0.007]
bootstrap p-val.	[0.004]	[0.423]	[0.131]	[0.133]	[0.015]	[0.000]
Crime Reports Tot	0.071*** (0.024)	0.042** (0.018)	0.069*** (0.023)	0.189*** (0.057)	0.058 (0.038)	0.442*** (0.084)
Adj R-squared	0.319	0.244	0.423	0.575	0.370	0.653
<i>Panel B. 2SLS - Crime Reports by Venezuelans (rates per 100,000)</i>						
$PEP_c \times I[PostAugust2018]$	0.033 (0.017)	0.024 (0.016)	0.078** (0.033)	0.036 (0.035)	0.051** (0.017)	0.105** (0.041)
FDR q-values	[0.040]	[0.078]	[0.031]	[0.113]	[0.019]	[0.026]
bootstrap p-val.	[0.134]	[0.264]	[0.019]	[0.418]	[0.001]	[0.032]
Crime Reports Tot	0.072*** (0.023)	0.042** (0.017)	0.075*** (0.024)	0.186*** (0.052)	0.059 (0.037)	0.450*** (0.082)
Adj R-squared	0.319	0.244	0.418	0.575	0.366	0.653
KP F Stat	20.29	21.11	21.27	21.88	21.16	21.46
<i>Panel C. OLS - Crime Reports by Venezuelans (rates per 100,000) - Excluding Controls for Total Crime</i>						
$PEP_c \times I[PostAugust2018]$	0.052*** (0.015)	0.018 (0.016)	0.028 (0.020)	0.035 (0.023)	0.020*** (0.007)	0.073*** (0.026)
FDR q-values	[0.007]	[0.151]	[0.115]	[0.115]	[0.017]	[0.017]
bootstrap p-val.	[0.000]	[0.421]	[0.213]	[0.185]	[0.004]	[0.012]
Adj R-squared	0.298	0.231	0.416	0.572	0.362	0.646
<i>Panel D. 2SLS - Crime Reports by Venezuelans (rates per 100,000) - Excluding Controls for Total Crime</i>						
$PEP_c \times I[PostAugust2018]$	0.049*** (0.016)	0.025 (0.016)	0.075** (0.034)	0.032 (0.034)	0.050*** (0.016)	0.094** (0.044)
FDR q-values	[0.007]	[0.049]	[0.032]	[0.128]	[0.007]	[0.032]
bootstrap p-val.	[0.018]	[0.229]	[0.040]	[0.472]	[0.004]	[0.065]
Adj R-squared	0.298	0.231	0.411	0.572	0.358	0.646
KP F Stat	21.21	21.21	21.21	21.21	21.21	21.21
Observations (All Panels)	1,080	1,080	1,080	1,080	1,080	1,080

Notes: The table presents the OLS and 2SLS estimations of specification (1). All columns include city and month-year fixed effects as well as the set of controls described in section IV. Standard errors are clustered at the city level. Cluster-robust wild-bootstrap p-values, and FDR q-values are presented in square brackets. To ensure statistical rigor, we consider a coefficient statistically significant only if it remains valid after adjusting for multiple hypothesis testing and accounting for the small number of clusters.

First of all, regardless of the specification choice the program resulted in higher reports in total

and sex crime. Second, in Panels B and D, the first-stage Kleibergen-Paap F statistic is large, eliminating concerns about weak instrumentation. For brevity, we focus on the 2SLS (panel B) results, since those estimates control for total crime and robust to endogeneity concerns. As such they are, in our view, the most robust results. In particular, the results of column (6) show that in the months after the roll-out of the PEP program, municipalities that had double the number of PEP holders (per 100,000 inhabitants) saw an increase of 0.1 in the rate of crimes reported by Venezuelans, on average. Considering that the rate of total crimes reported by Venezuelans is 0.79 (as documented in Table 2), this constitutes an increase of 12.5 percent, a sizable effect. In terms of specific types of crimes, we observe statistically significant effects of the program on reports of domestic violence, and sex crimes. Considering the point estimates for the outcome of reports by Venezuelans, the results are also economically significant. For example, a city with double the number of Venezuelan migrants who received the PEP program compared to the mean (relative to the local population), experienced an increase in the rate of sex crime reports by Venezuelans of 0.05. Since the average rate of reports by Venezuelans of these types of crimes is 0.08, this corresponds to more than a 62.5 percent increase in reporting after Venezuelans received regular migratory status. The same number for domestic violence crime reports is about 53 percent.

Note that the purpose of controlling the total number of reports  $CrimeReports_{ct}^{TOT}$ —a proxy for *all* crimes committed in that municipality every month—implies that our main estimator in this specification, when positive, does not represent an *increase in crimes* but rather an increase in crime reports by Venezuelans. Naturally, the estimators for  $CrimeReports_{ct}^{TOT}$  are all positive and statistically significant, since this variable explains a huge deal of variation of the dependent variable: the more crimes there were, the more crime reports Venezuelans made. Reassuringly, the results in Panel D are similar to the ones presented in Panels B. Yet, in those estimates we not only document increments on migrants reports of domestic violence and sex crimes but also homicides. Since the effects in homicide rates are not consistently observed in the 2SLS squares estimates we only see them as suggestive evidence.

As an additional robustness test we also estimate the effects of the program by aggregating the national data at the department-month level. We initially decided to only account for cities as rural

areas have high violence due to the presence of illegal armed groups and illegal crops, and hence, violent crime may be inflated. Yet, including the whole department is also a relevant exercise to test the validity of our main estimates. The results of this exercise are presented in Tables B1 and B2. They are qualitatively robust to our main results for sex crime and domestic violence. However, in these estimates we also document an increment of homicide rate reports, which as discussed earlier may be driven by the different context of Colombian rural areas.

The most obvious interpretation of these results is that the receipt of regular migratory status empowered previously undocumented Venezuelans to report crimes without fear of deportation or other legal repercussions. As such they might have increased trust from newly documented migrants in public institutions. If this is the case, we would expect this effect to be stronger among more vulnerable Venezuelan populations before they received the PEP migratory status. One dimension to test this hypothesis is gender, which is important because the results above concern crimes such as domestic violence and sex crimes, for which women have much higher rates of victimization. As expected, Venezuelan women reported such abuses at a much higher rate than men, as we show in Appendix Table A1.

Table 4 replicates the main estimation using total reports by Venezuelan men (column 1) and women (column 2) as the dependent variable. The results show reports by women drive the overall patterns. When focusing on the 2SLS estimates (panel B), we find a 0.16 points increase in the rate of crime reports by female Venezuelan migrants in municipalities with twofold more PEP holders per 100,000 inhabitants. Again, since the share of crime reports by Venezuelans on average is one percent, this corresponds to an increase of about 30 percent.

Results when using reports by male Venezuelan migrants are statistically insignificant and the magnitude of the coefficient estimates is smaller, hinting that the totality of the effect in Table 3 is driven by female migrants. We focus on total crime reports given the challenges of focusing on reports by gender and by type simultaneously, since the number of crimes within each cell becomes much smaller and thereby significantly reduces our ability to estimate with enough precision.

Table 4. Impacts of the PEP Program on Crime Reports by Migrant's Gender

	Male Total Crimes (1)	Female Total Crimes (2)
<i>Panel A. OLS - Crime Reports by Venezuelans (rates per 100,000)</i>		
$PEP_c \times I[PostAugust2018]$	0.023 (0.020)	0.109*** (0.026)
FDR q-values	[0.143]	[0.001]
bootstrap p-val.	[0.314]	[0.000]
Crime Reports Tot	0.089 (0.069)	0.407*** (0.088)
Adj R-squared	0.526	0.553
<i>Panel B. 2SLS - Crime Reports by Venezuelans (rates per 100,000)</i>		
$PEP_c \times I[PostAugust2018]$	0.014 (0.029)	0.159*** (0.042)
FDR q-values	[0.442]	[0.001]
bootstrap p-val.	[0.716]	[0.002]
Crime Reports Tot	0.085 (0.067)	0.430*** (0.088)
Adj R-squared	0.526	0.550
KP F Stat	21.46	21.46
<i>Panel C. OLS - Crime Reports by Venezuelans (rates per 100,000) - Excluding Controls for Total Crime</i>		
$PEP_c \times I[PostAugust2018]$	0.020 (0.019)	0.096*** (0.027)
FDR q-values	[0.168]	[0.003]
bootstrap p-val.	[0.345]	[0.000]
Adj R-squared	0.525	0.543
<i>Panel C. 2SLS - Crime Reports by Venezuelans (rates per 100,000) - Excluding Controls for Total Crime</i>		
$PEP_c \times I[PostAugust2018]$	0.012 (0.028)	0.149*** (0.044)
FDR q-values	[0.484]	[0.003]
bootstrap p-val.	[0.709]	[0.005]
Adj R-squared	0.525	0.541
KP F Stat	21.21	21.21
Observations (All Panels)	1,080	1,080

*Notes:* The table presents the OLS and 2SLS estimation of specification (1). All columns include city and month-year fixed effects as well as the set of controls described in section IV. Standard errors are clustered at the city level. Cluster-robust wild-bootstrap p-values, and FDR q-values are presented in square brackets. To ensure statistical rigor, we consider a coefficient statistically significant only if it remains valid after adjusting for multiple hypothesis testing and accounting for the small number of clusters.

Finally, we estimate the program's effects on crimes reported by victims of Colombian nationality.

Our analysis reveals a reduction in all reported crimes (Table 5). These findings are consistent with reductions in overall crime rates and in line with the significant improvements in migrants' income and consumption following the regularization program, which may have reduced the likelihood of committing crimes for migrants in Colombia (Ibáñez et al., 2024). Moreover, qualitative reports from local authorities indicate that undocumented migrants could not be convicted due to a loophole in Colombian legislation, whereas regularized migrants are subject to prosecution. Therefore, having proper documentation also increased the cost of committing crimes for migrants.

Table 5. Impacts of the PEP on Crime Reports by Colombians

	Homicides (1)	Threats (2)	Domestic Viol. (3)	Thefts (4)	Sex Crimes (5)	Total Crimes (6)
<i>Panel A. OLS - Crime Reports by Colombians (rates per 100,000)</i>						
$PEP_c \times I[PostAugust2018]$	-0.037** (0.017)	-0.083* (0.055)	-0.102** (0.033)	-0.011 (0.007)	-0.111** (0.048)	-0.024** (0.007)
FDR q-values	[0.044]	[0.068]	[0.013]	[0.068]	[0.038]	[0.013]
Crime Reports Tot	0.931*** (0.021)	0.877*** (0.126)	1.068*** (0.056)	1.011*** (0.034)	0.783*** (0.108)	1.021*** (0.040)
Adj R-squared	0.928	0.773	0.827	0.973	0.784	0.954
<i>Panel B. 2SLS - Crime Reports by Colombians (rates per 100,000)</i>						
$PEP_c \times I[PostAugust2018]$	-0.049* (0.022)	-0.186* (0.096)	-0.130* (0.072)	-0.016* (0.010)	-0.166* (0.098)	-0.044** (0.015)
FDR q-values	[0.062]	[0.078]	[0.078]	[0.084]	[0.080]	[0.025]
Crime Reports Tot	0.933*** (0.020)	0.877*** (0.120)	1.063*** (0.054)	1.009*** (0.031)	0.782*** (0.101)	1.011*** (0.038)
Adj R-squared	0.928	0.770	0.826	0.973	0.783	0.953
KP F Stat	20.29	21.11	21.27	21.88	21.16	21.46
<i>Panel C. OLS - Crime Reports by Colombians (rates per 100,000) - Excluding Controls for Total Crime</i>						
$PEP_c \times I[PostAugust2018]$	0.116*** (0.032)	-0.085* (0.064)	-0.190*** (0.065)	-0.049** (0.018)	-0.120** (0.056)	-0.056*** (0.011)
FDR q-values	[0.003]	[0.051]	[0.010]	[0.014]	[0.020]	[0.001]
Adj R-squared	0.444	0.641	0.657	0.857	0.668	0.833
<i>Panel D. 2SLS - Crime Reports by Colombians (rates per 100,000) - Excluding Controls for Total Crime</i>						
$PEP_c \times I[PostAugust2018]$	0.161** (0.065)	-0.154 (0.120)	-0.177* (0.100)	-0.036 (0.031)	-0.177* (0.100)	-0.068** (0.023)
FDR q-values	[0.034]	[0.133]	[0.085]	[0.133]	[0.085]	[0.019]
Adj R-squared	0.443	0.640	0.657	0.857	0.667	0.833
KP F Stat	21.21	21.21	21.21	21.21	21.21	21.21
Observations (All Panels)	1,080	1,080	1,080	1,080	1,080	1,080

Notes: The table presents the results of the OLS and 2SLS estimations of specification (1). All columns include city as well as the set of controls described in section IV. Standard errors are clustered at the city level. False Discovery Rate q-values are presented in square brackets are presented in brackets. To ensure statistical rigor, we consider a coefficient statistically significant only if it remains valid after adjusting for multiple hypothesis testing and accounting for the small number of clusters.

## V. A Assessing the validity of the identification strategy

We also present our results in an event study format to measure the effect across time averaged by quarter and by gender. The benefit of this complementary result is twofold. First, since our sample includes many months before the rollout of the PEP regularization program, we can test

for pre-trends that would threaten the validity of our results. Second, it also enables us to see the evolution of crime reports over time after the program rollout. The results are illustrated in Figure 3.

The figure illustrates the results of specification (1), with the difference that the treatment is interacted with 12 indicator variables representing quarters (i.e., three-month periods) from Q1 of 2017 to Q4 of 2019 (instead of the  $I[PostAugust2018]_t$  dummy). Each marker represents the average effect of the treatment on crime reports for the three-month period that corresponds to each quarter. The upper, middle, and lower panels present results using total crime reports by all Venezuelan migrants, male migrants, and female migrants, respectively. The gray vertical line represents the start of the rollout of the PEP program in August 2018.<sup>16</sup> The whiskers represent 95 percent confidence intervals, based on standard errors clustered at the city level.

Figure 3 suggests no evidence of pre-trends, as all estimators before the grey line—which symbolizes the roll-out of the treatment—are not statistically distinguishable from zero, relative to the base period.<sup>17</sup> This is encouraging as it reduces possible endogeneity concerns. Consistent with Table 4 (which measures the differences on average between “before” months and “after” months), we distinguish a stronger effect in crime reports by female migrants, whereas we barely distinguish any robust effect in such reports by male migrants. (This occurred only in the last few months of 2019, more than a year after the program rollout). As such, the positive coefficients in the post-August 2018 period for all Venezuelans (upper panel) stem almost entirely from female migrants. In addition, the uptake in crime reports by female migrants seems to continue for more than a year after the amnesty, implying that it is not an immediate effect that subsequently reverts to pre-trend levels.

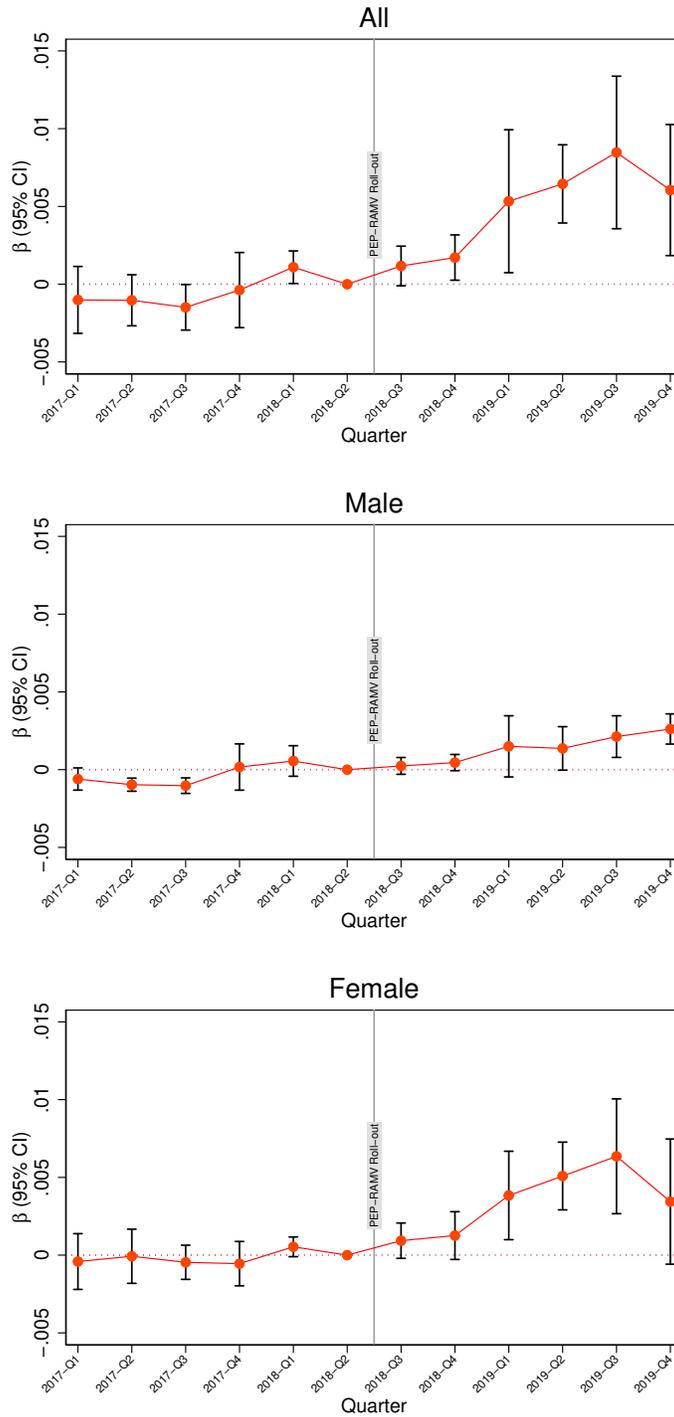
To complement this evidence and further support the validity of our results we also estimate a test of non-inferiority (Bilinski and Hatfield, 2018). These estimators are robust to violations on the parallel trend assumption. Our main results remain unchanged even after using this estimator

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<sup>16</sup>Results are based on OLS estimates due to the limitation of having only one instrument.

<sup>17</sup>When limiting the dependent variable to reports by male Venezuelan migrants, there are instances before the treatment where the estimator suggests there is a statistically significant difference between localities for different levels of treatment. However, the point estimates in those instances are very small.

Figure 3. Event Studies, Total Crime Reports



Notes: The figure presents the estimation of an event study based on specification (1). It estimates the effect of the treatment interacted with 12 quarter dummies from Q1 of 2017 to Q4 of 2019. The gray vertical line represents the beginning of the rollout of the PEP amnesty program in August 2018. The results are based on OLS estimates. The whiskers represent 95 percent confidence intervals based on standard errors clustered at the city level.

(Tables B3 and B4).

As shown by [Ibáñez et al. \(2024\)](#), the regularization program led to improvements in household consumption, income, and overall health, including mental health for adults who participated. These positive changes in economic and health conditions are inconsistent with any potential increase in domestic violence. Additionally, the program did not result in a disproportionate increase in female income compared to male income. Our analysis found no evidence of gender-based differences in the program's effects on either income or consumption. Therefore, we can confidently rule out higher domestic violence as a factor underlying the observed effects.

These results reinforce our interpretation that empowerment—especially female empowerment—propels the patterns. Once their fear of deportation and other repercussions drops significantly, these migrants report more crimes to the police. This is particularly true for crimes such as domestic violence and sex crimes that disproportionately affect women. Qualitative interviews with Venezuelan migrants reinforced our sense that having the PEP migratory status empowered them to report human rights abuses without fearing punishment.

## **V. B What do PEP holders say about filing crime reports?**

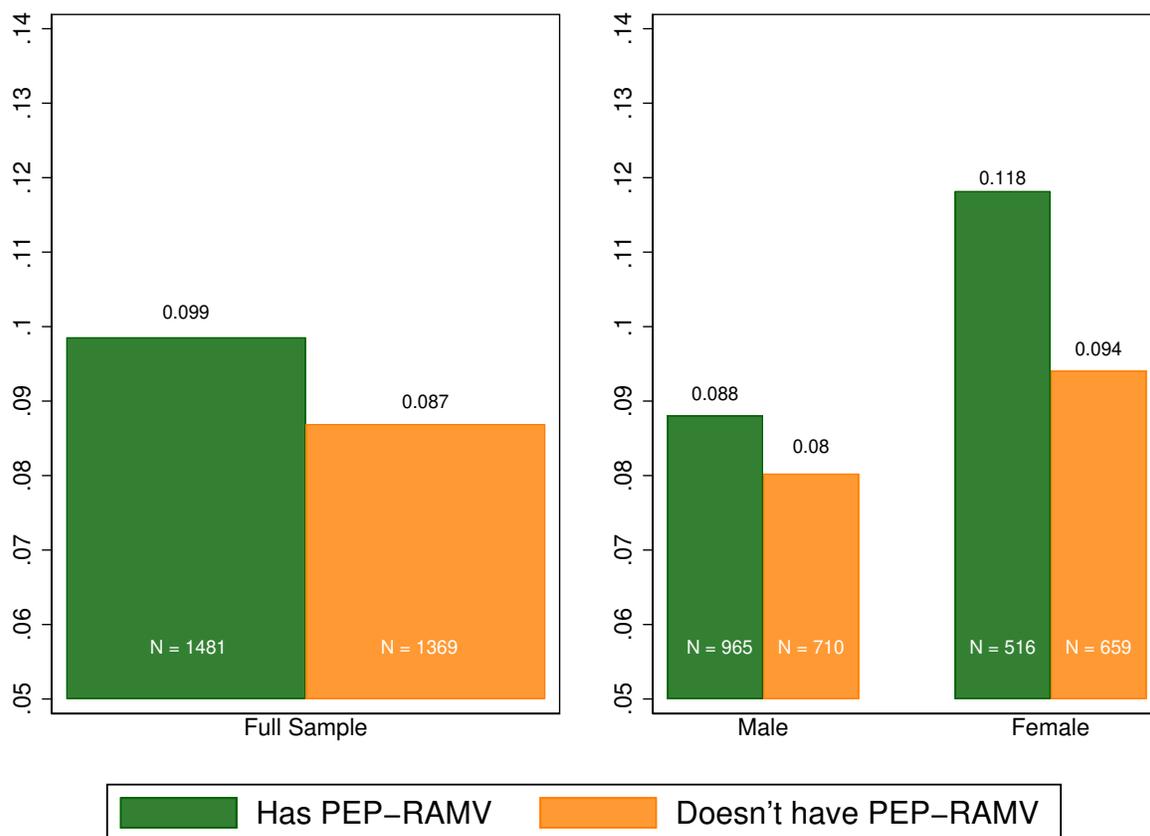
We also leverage data from the Venezuelan Refugee Panel Study (VenRePs) that interviewed a representative sample of Venezuelan PEP holders and non-holders in 2021 to examine the PEP's effects on migrant welfare.<sup>18</sup> One survey question asked respondents if they had reported being a victim of a crime to the police or any other institution. The responses are in Figure 4. Results for the full sample are in the left panel and by gender in the right panel. First, the results show strikingly low reporting rates across the board for migrants who were victims of a crime. Second, they confirm that migrants with the PEP reported crimes at higher rates than migrants without the PEP. In fact, 9.9 percent of household heads with PEP reported a crime; this number is lower for those without PEP (8.7 percent).

Third, the results by gender confirm our main conclusions by showing small differences between men with and without the PEP (of less than one percent) and more substantial differences for

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<sup>18</sup>See [Ibáñez et al. \(2024\)](#) for details of the sampling strategy.

Figure 4. Has Filed a Complaint for Any Reason with the Police or Any Institution



*Notes:* The figure presents the propensity to file a complaint with the police or any official body. We present results for all, male, and female heads of households using the VenRePs Survey collected by [Ibáñez et al. \(2024\)](#).

women. Particularly, female victims of a crime reported the event 11.8 percent of the time if they had the PEP but only 9.4 percent of the time if they did not have the PEP. The difference in reporting rates between PEP holders and nonholders is only statistically significant for women, as documented in Appendix Table C1.

## VI IMPACTS OF THE PEP ON CRIMES COMMITTED

To complement our main results, we also study the effects of the PEP on crimes committed by Venezuelan migrants. For this purpose, we employ data from Colombia’s Office of the Attorney General as described in the data section. We use the same 2SLS specification described in section IV to evaluate the effects of the regularization on the rate of total crimes directly committed by

Venezuelan migrants. We focus on crimes committed in capital cities after 2017 and before 2021.

The results in Table 6 are estimates for total crime rates as well as for crimes committed by men and women, separately. The estimates are in line with our main results suggesting actual reductions in almost all crime rates, although the estimated effects are imprecise. Moreover, we only observe increments in sex crimes committed by men, in line with the story that more reports are being made by females against potential partners of the same nationality. The estimated effects are robust to the exclusion of the control for total crime (Table B5). Moreover, the event studies across all outcomes show increases only in domestic and sexual crimes committed by Venezuelan migrants, as would be mechanically expected based on the results presented in the previous section (Figure B2).

Table 6. Impacts of the Amnesty on Crimes Committed by Venezuelan Migrants

	Homicides (1)	Threats (2)	Domestic Vio. (3)	Thefts (4)	Sex Crimes (5)	Total Crimes (6)
<i>Panel A: All Venezuelans (rates per 100,000)</i>						
$PEP_c \times I[PostAugust2018]_t$	-0.146 (0.123)	-0.098 (0.071)	-0.217 (0.183)	0.274 (0.189)	0.219* (0.128)	-0.151 (0.244)
$CrimeReports_{ct}^{TOT}$	0.033 (0.066)	0.102*** (0.022)	0.334*** (0.062)	0.257** (0.106)	0.340*** (0.111)	0.886*** (0.218)
R-squared	0.835	0.801	0.844	0.923	0.902	0.936
KP F Stat	7.730	8.544	7.754	8.359	9.255	7.532
<i>Panel B: Male Venezuelans (rates per 100,000)</i>						
$PEP_c \times I[PostAugust2018]_t$	-0.194** (0.092)	-0.053 (0.052)	-0.187 (0.176)	0.238 (0.173)	0.229* (0.123)	-0.230 (0.237)
$CrimeReports_{ct}^{TOT}$	0.079 (0.072)	0.095*** (0.020)	0.342*** (0.061)	0.207** (0.098)	0.364*** (0.106)	0.919*** (0.180)
R-squared	0.837	0.822	0.854	0.916	0.905	0.935
KP F Stat	7.730	8.544	7.754	8.359	9.255	7.532
<i>Panel C: Female Venezuelans (rates per 100,000)</i>						
$PEP_c \times I[PostAugust2018]_t$	0.023 (0.050)	-0.081 (0.057)	-0.015 (0.057)	-0.011 (-0.09)	-0.001 (0.014)	-0.125 (0.126)
$CrimeReports_{ct}^{TOT}$	-0.044 (0.046)	0.014 (0.011)	0.038 (0.034)	0.063 (0.047)	-0.047* (0.025)	0.263* (0.148)
R-squared	0.716	0.737	0.695	0.755	0.730	0.808
KP F Stat	7.730	8.544	7.754	8.359	9.255	7.532
Observations (All Panels)	150	150	150	150	150	150

*Notes:* The table presents estimates for the identification strategy described in section IV, using crimes rates per 100,000 inhabitants committed by Venezuelan migrants as the dependent variable. Panel A presents results for the full samples. Panel B presents results for men and panel C for women. The variable  $Crime_{ct}^{Tot}$  is the inverse hyperbolic sine of the total crimes for the same type of crime per 100,000 inhabitants. All columns include city and year fixed effects as well as the set of controls described in section IV. Standard errors are clustered at the city level.

## VII CONCLUDING REMARKS

This study examines the crime effects of a migration reform that granted regular migratory status to approximately 281,000 Venezuelan migrants in Colombia. We document two key findings. First, we find that cities where more Venezuelans received regular migratory status experienced an increase in crime reports by these migrants. These reports are primarily related to domestic violence and sexual crimes and are predominantly filed by female migrants. Consistent with these findings, we observe a corresponding increase in convictions and trials of male Venezuelan per-

petrators of domestic and sexual crimes, which is intuitive since these individuals are likely the partners of the victims. By focusing on crime reports to local authorities, we capture a behavioral change reflecting the empowerment of a highly vulnerable population. These findings are significant because they highlight the social benefits of regularization programs—benefits that are often overlooked due to their difficulty to measure. The regularization program empowered women to report violations of their human rights, underscoring its importance.

Second, we observe a reduction in total crime reports by Colombian natives and a decrease in crimes committed by Venezuelans, excluding sexual and domestic crimes (which increased mechanically due to the increment in reports). This aligns with qualitative evidence suggesting that undocumented migrants who were reported or detained could not be prosecuted due to a loophole in Colombian legislation. Proper documentation ensures the enforcement of criminal laws. Additionally, the program's documented increases in income and consumption (Ibáñez et al., 2024) likely reduced petty crime by improving the economic opportunities of Venezuelan migrants, thereby lowering their propensity to commit crimes.

The evidence on the impacts of the PEP regularization program underscores the critical role of proper identification and registration of undocumented forced migrants in effective migration management and in ensuring the safety and security of both migrants and host communities. Many migrants arrive without formal documentation, complicating efforts to monitor and address criminal activities. A robust identification system, coupled with enhanced access to services, allows authorities to process individuals effectively, ensuring accountability for serious crimes while protecting the rights of innocent migrants.

Programs like PEP, which enhance access to social services, legal protections, and labor markets (as shown in Ibáñez et al., 2024), also reduce risks of exploitation and criminal behavior. Furthermore, such programs enable law enforcement to monitor migration flows more effectively, reduce social tensions, and prevent wrongful deportations, all while safeguarding human rights.

A promising avenue for future research is to explore whether these effects remain consistent in the long term or diminish after the implementation of the treatment. Moreover, in the future, as the criminal trials resolve, it would also be extremely interesting to understand what are the long-term

implications for the denounced individuals and whether they are apprehended or deported.

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# Online Appendix for

## *Empowering Migrants:*

### *Impacts of a Migrant Amnesty on Crime Reports*

Ana María Ibáñez  Sandra V. Rozo  Dany Bahar

January 17, 2025

#### **A EXTENDED SUMMARY STATISTICS**

##### **A. A RAMV Registration Points**

Figure [A1](#) plots the different Colombian municipalities with a physical registration point for the RAMV program between April and June 2018.

##### **A. B Further Crime Report Statistics**

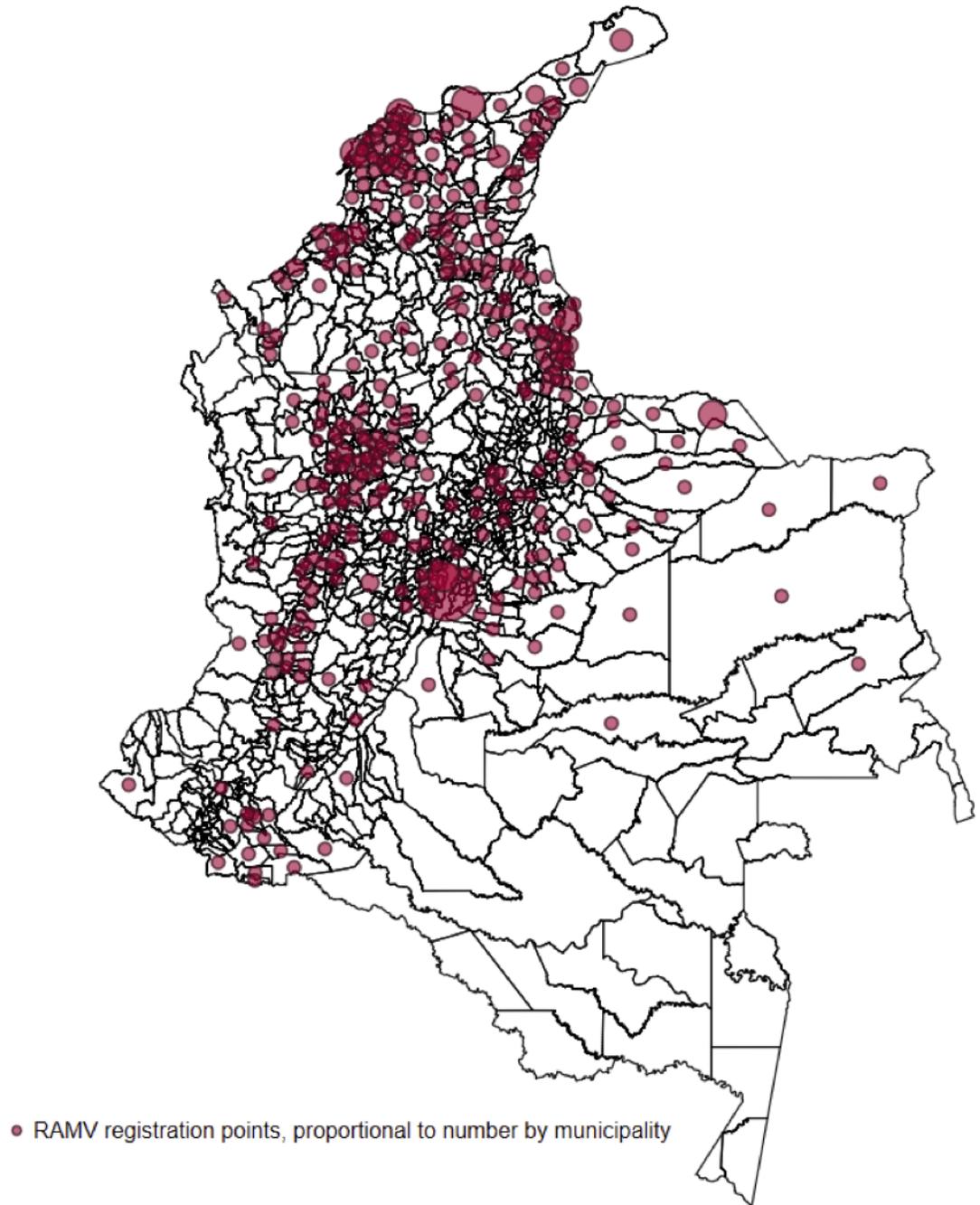
Table [A1](#) presents the total crimes reported per 100,000 inhabitants. Total crimes, in our sample, range from 0 to 181, or relatively small numbers. However, Venezuelans comprise a small share of the Colombian population, so we would not expect a very large number of crime reports by such a small minority. Theft is the most common type of crime by far.

Table [A1](#) presents the crimes reported in our sample per 100,000 local inhabitants, by gender. The upper panel presents crime reports by Venezuelan men while the lower panel presents crime reports by Venezuelan women. On average, women report about 30 percent more crimes than men (using the total crimes figure). As expected, this is mostly driven by reports of domestic violence and sex crimes, for which Venezuelan women report twice as many and seven times as many, respectively.

##### **A. C Instrumental Variable**

Figure [A2](#) plots the distribution of the average registration days per municipality in our sample, our instrumental variable. As can be seen, the variable distributes between the values of roughly 80 to 120 days, resembling a normal distribution.

Figure A1. RAMV Registration Points



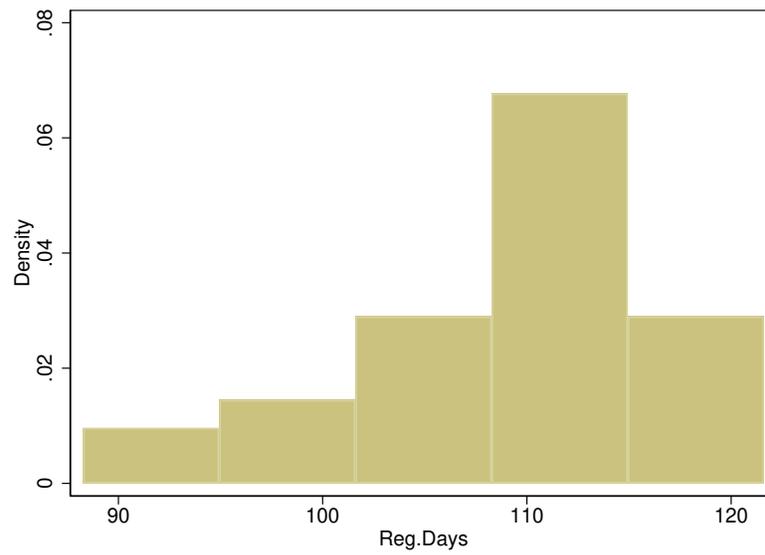
*Notes:* The figure marks Colombian municipalities with physical registration points for the RAMV registry between April and June of 2018. Marker size is proportional to the number of points per municipality.

Table A1. Descriptive Statistics - Crime Reports Rates

	Observations	Average	SD	Min	Max
<i>Panel A: Total Crime Reports (rates per 100,000)</i>					
Homicides (per 100K)	1,080	1.99	1.81	0.00	18.97
Threats (per 100K)	1,080	12.00	8.46	0.00	52.82
Domestic Violence (per 100K)	1,080	20.82	13.42	0.00	98.67
Thefts (per 100K)	1,080	83.80	30.95	12.69	193.44
Sex Crimes (per 100K)	1,080	7.95	4.61	0.00	31.16
Total Crimes (per 100K)	1,080	127.17	40.56	40.49	266.15
<i>Panel B: Crime Reports by Venezuelans (rates per 100,000)</i>					
Homicides (per 100K)	1,080	0.08	0.42	0.00	4.88
Threats (per 100K)	1,080	0.04	0.24	0.00	3.07
Domestic Violence (per 100K)	1,080	0.15	0.49	0.00	9.18
Thefts (per 100K)	1,080	0.44	0.90	0.00	14.65
Sex Crimes (per 100K)	1,080	0.08	0.42	0.00	6.12
Total Crimes (per 100K)	1,080	0.79	1.63	0.00	19.59
<i>Panel C: Crime Reports by Venezuelan Males (rates per 100,000)</i>					
Homicides (per 100K)	1,080	0.07	0.38	0.00	4.88
Threats (per 100K)	1,080	0.02	0.14	0.00	3.06
Domestic Violence (per 100K)	1,080	0.02	0.20	0.00	4.74
Thefts (per 100K)	1,080	0.22	0.45	0.00	5.44
Sex Crimes (per 100K)	1,080	0.01	0.12	0.00	3.06
Total Crimes (per 100K)	1,080	0.34	0.72	0.00	8.71
<i>Panel D: Crime Reports by Venezuelan Females (rates per 100,000)</i>					
Homicides (per 100K)	1,080	0.01	0.15	0.00	4.78
Threats (per 100K)	1,080	0.02	0.18	0.00	3.06
Domestic Violence (per 100K)	1,080	0.12	0.44	0.00	9.18
Thefts (per 100K)	1,080	0.22	0.68	0.00	14.65
Sex Crimes (per 100K)	1,080	0.07	0.39	0.00	6.12
Total Crimes (per 100K)	1,080	0.45	1.19	0.00	15.24

*Notes:* The Table reports the summary statistics of the crime reports per 100,000 inhabitants used in our study for 1,080 observations that correspond to 30 cities and 36 months, as reported in total (panel A), by Venezuelans (panel B), by Venezuelan men (panel C) and by Venezuelan women (panel D).

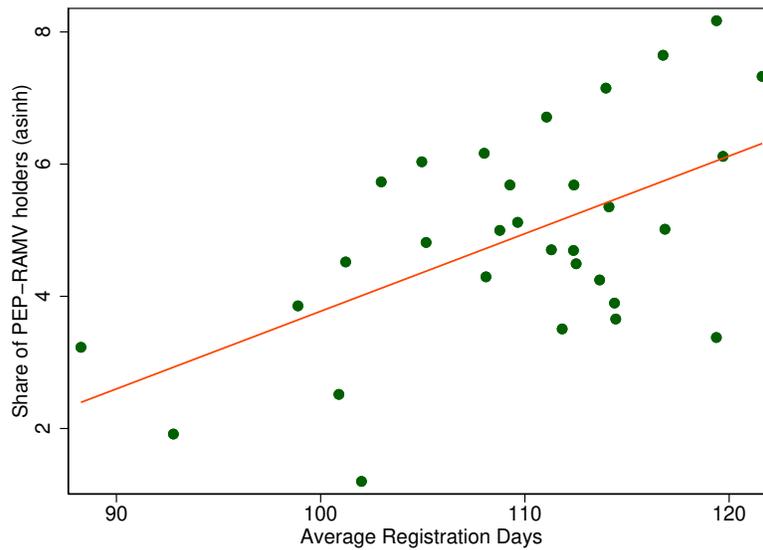
Figure A2. Distribution of Instrumental Variable



*Notes:* The figure plots the distribution of the average registration days per municipality using municipalities in our sample.

Figure A3 visualizes the relationship between the average registration days per municipality (detailed in the main body of the text, in section ??) against the number of Venezuelans in that same municipality who received the PEP per 100,000 inhabitants. This visualization corresponds to the first stage of the 2SLS estimation described in our identification strategy.

Figure A3. Visualization of First Stage

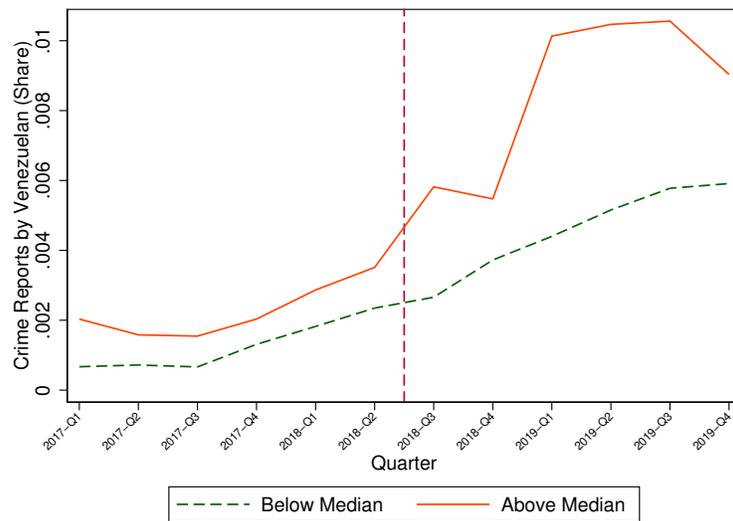


*Notes:* The figure plots the average registration days per municipality against the number of Venezuelans in that same municipality who received the PEP per 100,000 inhabitants. The graph uses only municipalities in our sample.

#### A. D Evolution of Crime Reports by Venezuelans

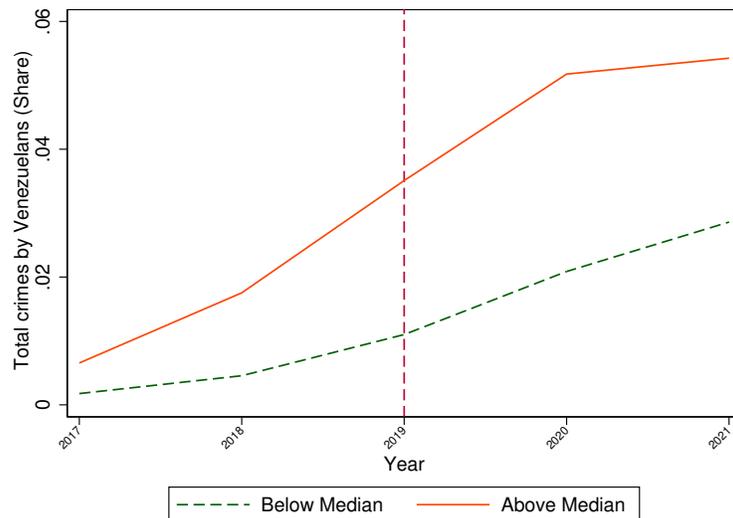
Figure A4 presents the average reports of total crimes by Venezuelan migrants, as a share of total, for municipalities below and above median in terms of the treatment (e.g., the share of Venezuelans with the PEP holders for each 100,000 inhabitants) aggregated by quarters. This uses only raw data, with no controls whatsoever. As a purely descriptive exercise, the graph shows that both groups of cities had somewhat parallel trends up to the second quarter of 2018, after which there was a divergence: more reports were filed in municipalities that had more Venezuelans with the PEP than in municipalities that had fewer Venezuelans with the PEP.

Figure A4. Evolution of Crime Reports by Venezuelans, by Treatment Intensity



Notes: The figure plots the evolution of total crime reports by Venezuelans, as a share of total crime reports, for cities with treatment (i.e., PEP holders per 100,000 inhabitants) above median and below median. The dashed vertical line marks August 2018, when the announcement and subsequent rollout of the PEP started.

Figure A5. Evolution of Total Crimes by Venezuelans, by Treatment Intensity

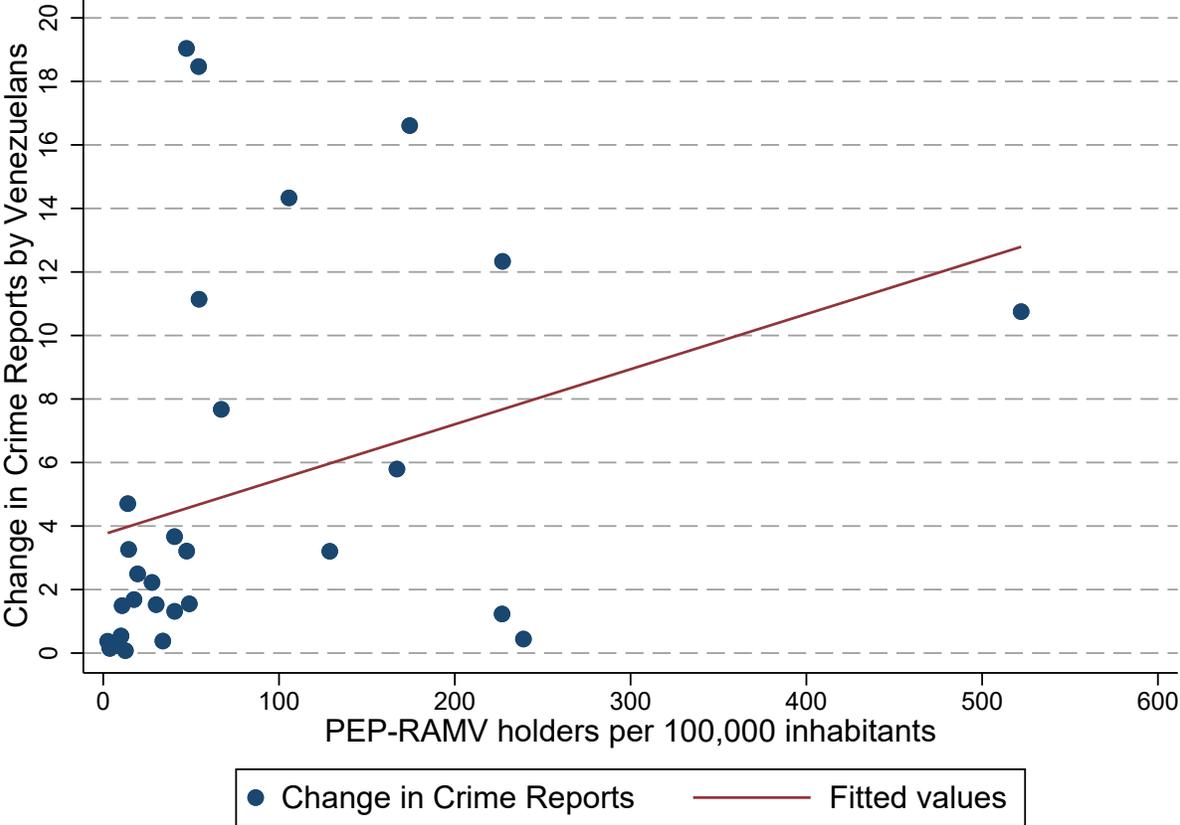


Notes: The figure plots the evolution of total crimes by Venezuelans, as a share of total crime cases indicted by Fiscalía, for cities with treatment (i.e., PEP holders per 100,000 inhabitants) above median and below median. The dashed vertical line marks the announcement and subsequent rollout of the PEP.

## **B ROBUSTNESS TESTS**

**B. A Department Aggregation**

Figure B1. Change in Crime Reports before and after PEP Implementation



Notes: The figure shows the change in the average crime reports by Venezuelan migrants one year before, and after the PEP implementation by department.

Table B1. Impacts of the PEP Amnesty on Crime Reports by Migrants

	Homicides (1)	Threats (2)	Domestic Viol. (3)	Thefts (4)	Sex Crimes (5)	Total Crimes (6)
<i>Panel A. OLS - Crime Reports by Venezuelans (rates per 100K)</i>						
$PEP_c \times I[PostAugust2018]_t$	0.017*** (0.004)	0.015 (0.009)	0.035** (0.016)	0.030 (0.014)	0.017* (0.010)	0.075** (0.021)
q-values	[0.011]	[0.074]	[0.042]	[0.046]	[0.074]	[0.011]
bootstrap p-val.	[0.009]	[0.328]	[0.020]	[0.157]	[0.072]	[0.001]
$CrimeReports_{ct}^{TOT}$	0.046* (0.025)	0.032*** (0.010)	0.063** (0.027)	0.181*** (0.053)	0.056 (0.039)	0.488*** (0.097)
Adj R-squared	0.590	0.216	0.364	0.573	0.333	0.684
<i>Panel B. 2SLS - Crime Reports by Venezuelans (rates per 100K)</i>						
$PEP_c \times I[PostAugust2018]_t$	0.040*** (0.014)	0.011 (0.015)	0.087* (0.046)	0.053 (0.038)	0.059** (0.027)	0.131** (0.047)
q-values	[0.020]	[0.165]	[0.053]	[0.082]	[0.042]	[0.022]
bootstrap p-val.	[0.040]	[0.541]	[0.003]	[0.268]	[0.003]	[0.009]
$CrimeReports_{ct}^{TOT}$	0.045* (0.024)	0.032*** (0.011)	0.075** (0.030)	0.181*** (0.053)	0.062 (0.042)	0.492*** (0.091)
Adj R-squared	0.168	0.095	0.110	0.178	0.138	0.219
KP F Stat	11.32	11.33	11.26	11.33	11.11	11.32
Observations (All Panels)	1,152	1,152	1,152	1,152	1,152	1,152

*Notes:* The table presents the OLS and 2SLS estimations of specification (1). All columns include department and month-year fixed effects as well as the set of controls described in section IV aggregated at the department level. Standard errors are clustered at the department level. Cluster-robust wild-bootstrap p-values, and q-values are presented in square brackets. To ensure statistical rigor, we consider a coefficient statistically significant only if it remains valid after adjusting for multiple hypothesis testing and accounting for the small number of clusters.

Table B2. Impacts of the PEP Amnesty on Crime Reports by Migrant's Gender

	Male Total Crimes (1)	Female Total Crimes (2)
<i>Panel A. OLS - Crime Reports by Venezuelans (rates per 100K)</i>		
$PEP_c \times I[PostAugust2018]_t$	0.028 (0.013)	0.063*** (0.018)
q-values	[0.026]	[0.007]
bootstrap p-val.	[0.146]	[0.008]
$CrimeReports_{ct}^{TOT}$	0.102 (0.052)	0.414*** (0.100)
Adj R-squared	0.580	0.552
<i>Panel B. 2SLS - Crime Reports by Venezuelans (rates per 100K)</i>		
$PEP_c \times I[PostAugust2018]_t$	0.026 (0.032)	0.167*** (0.051)
q-values	[0.120]	[0.007]
bootstrap p-val.	[0.521]	[0.009]
$CrimeReports_{ct}^{TOT}$	0.102* (0.052)	0.423*** (0.090)
Adj R-squared	0.142	0.188
KP F Stat	11.32	11.32
Observations (All Panels)	1,152	1,152

*Notes:* The table presents the OLS and 2SLS estimations of specification (1). All columns include department and month-year fixed effects as well as the set of controls described in section IV aggregated at the department level. Standard errors are clustered at the department level. Cluster-robust wild-bootstrap p-values, and q-values are presented in square brackets. To ensure statistical rigor, we consider a coefficient statistically significant only if it remains valid after adjusting for multiple hypothesis testing and accounting for the small number of clusters.

## B. B Control for Differential Pre-Trends

Table B3. Impacts of the PEP Program on Crime Reports by Migrants

	Homicides (1)	Threats (2)	Domestic Viol. (3)	Thefts (4)	Sex Crimes (5)	Total Crimes (6)
<i>Panel A. OLS - Crime Reports by Venezuelans (rates per 100,000)</i>						
$PEP_c \times I[PostAugust2018]$	0.039*** (0.014)	0.019 (0.015)	0.032 (0.020)	0.044 (0.023)	0.021** (0.008)	0.090*** (0.025)
FDR q-values	(0.018)	(0.118)	(0.075)	(0.056)	(0.022)	(0.007)
bootstrap p-val.	[0.006]	[0.361]	[0.162]	[0.112]	[0.019]	[0.001]
$CrimeReports_{ct}^{TOT}$	0.070*** (0.024)	0.043** (0.018)	0.068*** (0.023)	0.214*** (0.056)	0.067 (0.041)	0.485*** (0.075)
Adj R-squared	0.303	0.226	0.398	0.557	0.345	0.633
<i>Panel B. 2SLS - Crime Reports by Venezuelans (rates per 100,000)</i>						
$PEP_c \times I[PostAugust2018]$	0.029 (0.017)	0.029 (0.016)	0.068** (0.032)	0.039 (0.035)	0.050*** (0.018)	0.116*** (0.042)
FDR q-values	(0.073)	(0.07)	(0.048)	(0.109)	(0.019)	(0.019)
bootstrap p-val.	[0.153]	[0.172]	[0.053]	[0.362]	[0.007]	[0.029]
$CrimeReports_{ct}^{TOT}$	0.071*** (0.023)	0.043** (0.017)	0.072*** (0.023)	0.212*** (0.054)	0.068* (0.040)	0.495*** (0.075)
Adj R-squared	0.303	0.226	0.395	0.557	0.342	0.633
KP F Stat	19.86	20.59	20.85	21.45	20.62	21.07
Observations (All Panels)	1,080	1,080	1,080	1,080	1,080	1,080

Notes: The table presents the results for the non-inferiority test proposed by [Bilinski and Hatfield 2018](#). It shows the results of the OLS and 2SLS estimations of specification (1), controlling for an indicator variable of differential linear pre-trends between the treatment and control groups. All columns include city as well as the set of controls described in section IV. Standard errors are clustered at the city level. Cluster-robust wild-bootstrap p-values, and q-values are presented in square brackets. To ensure statistical rigor, we consider a coefficient statistically significant only if it remains valid after adjusting for multiple hypothesis testing and accounting for the small number of clusters.

Table B4. Impacts of the PEP Amnesty on Crime Reports by Migrant's Gender

	Male Total Crimes (1)	Female Total Crimes (2)
<i>Panel A. OLS - Crime Reports by Venezuelans (rates per 100,000)</i>		
$PEP_c \times I[PostAugust2018]$	0.023 (0.020)	0.109*** (0.026)
FDR q-values	[0.143]	[0.001]
bootstrap p-val.	[0.314]	[0.000]
$CrimeReports_{ct}^{TOT}$	0.089 (0.069)	0.407*** (0.088)
Adj R-squared	0.526	0.553
<i>Panel B. 2SLS - Crime Reports by Venezuelans (rates per 100,000)</i>		
$PEP_c \times I[PostAugust2018]$	0.014 (0.029)	0.159*** (0.042)
FDR q-values	[0.442]	[0.001]
bootstrap p-val.	[0.716]	[0.002]
$CrimeReports_{ct}^{TOT}$	0.085 (0.067)	0.430*** (0.088)
Adj R-squared	0.526	0.550
KP F Stat	21.46	21.46
Observations (All Panels)	1,080	1,080

*Notes:* The table presents the results for the non-inferiority test proposed by [Bilinski and Hatfield 2018](#). It shows the results of the OLS and 2SLS estimations of specification (1), controlling for an indicator variable of differential linear pre-trends between the treatment and control groups. All columns include city as well as the set of controls described in section IV. Standard errors are clustered at the city level. Cluster-robust wild-bootstrap p-values, and q-values are presented in square brackets. To ensure statistical rigor, we consider a coefficient statistically significant only if it remains valid after adjusting for multiple hypothesis testing and accounting for the small number of clusters.

## B. C Removing the Control of Total Crimes

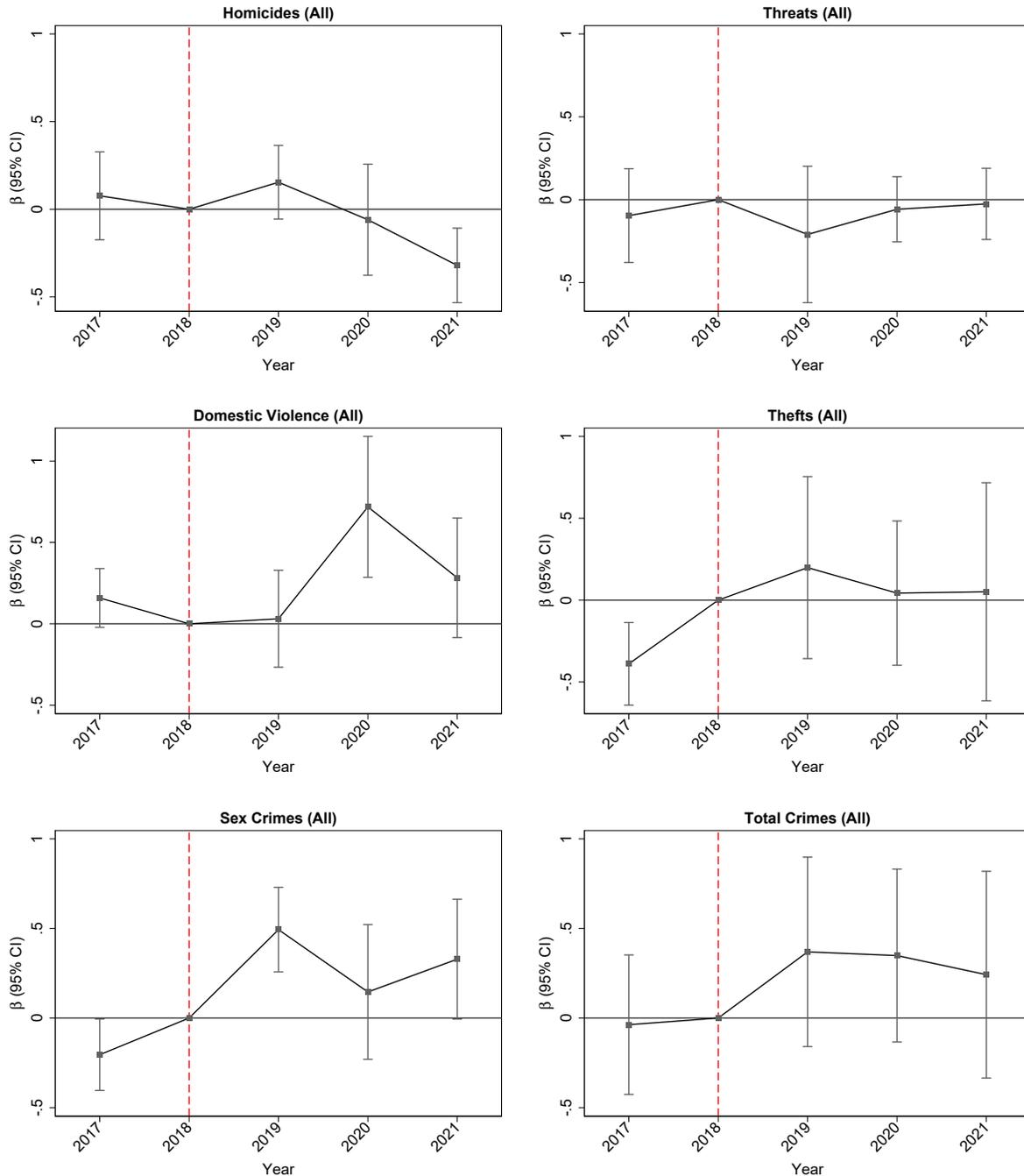
Table B5. Impacts of the Amnesty on Crimes Committed by Venezuelan Migrants

	Homicides (1)	Threats (2)	Domestic Vio. (3)	Thefts (4)	Sex Crimes (5)	Total Crimes (6)
<i>Panel A: All Venezuelans (rates per 100,000)</i>						
$PEP_c \times I[PostAugust2018]_t$	-0.144 (0.120)	0.021 (0.096)	-0.071 (0.190)	0.309 (0.205)	0.258* (0.136)	0.097 (0.237)
R-squared	0.835	0.776	0.834	0.919	0.891	0.931
<i>Panel B: Male Venezuelans (rates per 100,000)</i>						
$PEP_c \times I[PostAugust2018]_t$	-0.190** (0.087)	0.058 (0.073)	-0.038 (0.193)	0.267 (0.185)	0.270** (0.134)	0.026 (0.232)
R-squared	0.835	0.798	0.841	0.913	0.891	0.930
<i>Panel C: Female Venezuelans (rates per 100,000)</i>						
$PEP_c \times I[PostAugust2018]_t$	0.021 (0.053)	-0.065 (0.059)	0.002 (0.058)	-0.002 (0.092)	-0.006 (0.013)	-0.051 (0.121)
R-squared	0.714	0.732	0.695	0.754	0.722	0.806
Observations (All Panels)	150	150	150	150	150	150

Notes: The table presents estimates for the identification strategy described in section IV, using crimes rates per 100,000 inhabitants committed by Venezuelan migrants as the dependent variable. Panel A presents results for the full samples. Panel B presents results for men and panel C for women. All columns include city and year fixed effects as well as the set of controls described in section IV. Standard errors are clustered at the city level.

## B. D Event Study - Crimes Committed by Migrants

Figure B2. Parallel Trend Assumption - All Sample



*Notes:* The figure presents the estimation of an event study based on specification (1). It estimates the effect of the treatment interacted with 5 year dummies from 2017 to 2021. The red vertical line represents the beginning of the rollout of the PEP amnesty program in August 2018. The results are based on OLS estimates. The whiskers represent 95 percent confidence intervals based on standard errors clustered at the city level.

## C EVIDENCE FROM OTHER SOURCES OF INFORMATION

Table C1. Has filed a complaint for any reason with the police or any institution

PEP		No-PEP		Difference	STD	p-value
Observations	Mean	Observations	Mean			
<i>Panel A. All Sample</i>						
1,481	0.099	1,369	0.087	0.012	0.010	0.140
<i>Panel B. Male Sample</i>						
965	0.088	710	0.080	0.008	0.010	0.290
<i>Panel C. Female Sample</i>						
516	0.118	659	0.094	0.024	0.020	0.090*

*Notes:* The table presents results from paired two sample t-test between Head of household with PEP vs Head of household with no PEP in the propensity to fill a complaint for any reason with the police or any official body. First panel presents results for full sample, the second panel presents results only for male head households and the third panel presents results for female head households. We present the **p-value** for the following alternative hypothesis  $H_a : \mu_{pep} > \mu_{nopep}$