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## Deportation, Crime, and Victimization

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# Deportation, Crime, and Victimization

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## Abstract

We study whether the forced removal of undocumented immigrants from the United States increases violent crime in Mexican municipalities. Using municipal panel data on homicide rates matched with annual deportation flows from the United States to Mexico, we assess whether municipalities with repatriation points experience higher violent crime with surges in deportation flows. We consistently find that municipalities with greater geographic exposure to deportation flows have higher violent crime. The effects are mostly driven by increments in homicide rates of young males and minors.

**JEL Classification:** O15; R2; K37.

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# 1 Introduction

With the unprecedented growth of international migration, many developed countries have increased enforcement policies to decrease the flow of illegal immigrants into their countries. For instance, total annual forced removals from the United States increased from approximately 400,000 in 1998 to 1.7 million in 2013 ([DHS, 2014](#)), with more than 95% of the total number of deportees being sent to Mexico and Central America. Additionally, the current administration of the United States has placed an increased emphasis on illegal immigration — further increasing deportations (see [The New York Times, 2017](#) and [The Washington Post, 2017](#) for reports).<sup>1</sup>

This article examines the effects of deportations from host countries on violent crime in the origin countries focusing on the case of the United States and Mexico. Identifying these effects is crucial for the adequate formulation of public policy to inform the current debate on the consequences of increasing immigration enforcement in the United States and on the possible unintended effects of these policies. Additionally, it is an important step towards preventing higher levels of violence in origin locations and interrupting the vicious cycle of violence-driven migration towards the United States.

A link between destination country enforcement policy and origin country crime may occur through two main channels. First, the selective removal of individuals with previous criminal backgrounds may create concentrated flows of deportees with weak ties to their home country, insufficient skills valued in the formal labor market, but substantial criminal and correctional experiences. Such deportees may have a higher tendency to turn to criminal activity to generate income, with enforcement policy effectively exporting crime to the home nation. For example, to the extent that the individual's experience in the United States was criminogenic (e.g., migrant youth growing up in and acculturating to the norms of very poor United States

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<sup>1</sup>Official statistics are not yet available.

neighborhoods, criminality-enhancing experiences within the United States criminal justice system, developed formal ties with United States street gangs, etc.), the migrant may return to the source country more criminally prone than when he or she left for the United States (or relative to the person's counterfactual criminality in the absence of the trip north). Deportees with formal ties to United States street gangs may seek out local gangs upon removal, start local divisions of their organization, and even help expand their activities transnationally. Deportees with previous criminal backgrounds, consequently, could possibly become *perpetrators* of crime upon their return to their home countries (Bain et al., 2006). This issue has recently come to the fore with a surge in the migration of unaccompanied minors from Central America to the United States (Nakamura, 2014; Meyer et al., 2014). Press accounts of the unaccompanied minor flow stress the extremely high violence and, in particular, the activity of criminal gangs in Central America as a major push factor (Markon and Partlow, 2015; Fisher, 2016). The criminal gangs, in turn, have direct connections to the United States and even bear the names of and have connections to violent United States' street gangs (such as the "18th Street" or the "MS-13" gangs). In fact, even deported individuals without previous criminal backgrounds may decide to turn to crime to generate income.

Second, large scale deportation and strict border enforcement may create a large pool of potential criminal *victims* among deportees and those trying to migrate without authorization. Migrants are often returned to repatriations points located along the United States border with Mexico, or to a few select repatriation points within the country's interior; not necessarily near their municipalities of origin. Many migrants stay in the areas to which they were deported in the hope of returning to the United States and may fall prey to individuals seeking to rob deportees and perhaps extort their families (as documented qualitatively by Slack, 2015). Migrants without criminal backgrounds, but who have lived for long periods of time outside of their home countries, hence, may be more likely to become crime victims (De León, 2013). Several media outlets, for instance, suggest that deported non-criminals face a

higher likelihood of victimization when they are deported from the United States and arrive to Mexico (see [The Washington Post, 2010](#); [Los Angeles Times, 2011](#); and [Advocacy for Human Rights in the Americas, 2011](#) for examples).

We explore the effects of regional concentration of U.S. deportation flows on local Mexican crime between 1998 and 2015. While crime rates have been declining over the last two decades in most regions of the world, crime and violent crime in particular, have surged in Central America and Mexico ([Di Tella et al., 2010](#)).<sup>2</sup> Moreover, during our study period the United States drastically increased border and internal immigration enforcement activities. Policy makers in Mexico and Central America, consequently, continuously express concerns about the possible effects that forced deportations from the United States may have on the violent crime upsurge in this region ([Seelke, 2014](#)).

Specifically, we examine the effects of deportation from the United States on homicide rates in Mexico using an annual-municipal panel. Our empirical strategy involves testing for an interaction effect of the location of repatriation points and deportation levels on municipality-level crime. As such, we test whether Mexican municipalities with repatriation points see increments in their violent crime in years when deportations flows from the U.S. increase.

We consistently find large effects of deportation flows on homicide rates. Our estimates suggest that when deportations from the United States increase by 1,000 individuals, total homicide rates increase by 0.24 in municipalities with repatriation centers. The point estimates correspond to a 1.7 percent change over the mean homicide rates (13.99 per 100,000 individuals). When studying the effects of deportation flows on homicide rates by gender and age, we find that the increments in total homicide rates are completely driven by an increase in young males homicide rates (ages 20 to 39). Particularly, our estimates suggest that when deportations from the United States increase by 1,000 individuals, municipalities with repatri-

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<sup>2</sup>According to the 2013 Global Study on Homicide, between 1995 and 2012, homicide rates in Central America increased by 51.4%, from 17.5 to 26.5 victims per 100,000 population; positioning the 8 countries of this region as the most violent in the world ([UNODC, 2014](#)).

ation centers see an increase of 0.14 in their young males homicide rates relative to the other municipalities. These effects correspond to a 2.1 percent change over the mean homicide rate for young males (6.71 per 100,000 individuals). Overall, our results strongly suggest that deportations are increasing violent crime in recipient municipalities. As such, deportations may be perpetuating the cycle of violence and further enlarging violence-induced migration back to the United States.

Our estimates include municipality and year fixed effects, and thus flexibly control for time-invariant municipal heterogeneity as well as time trends common to all cross sectional analytical units. Our estimates will be valid so long as there are no other time-varying covariates which are also affecting municipalities with and without repatriation points in different ways. We present several exercises to address these concerns. First, we run a placebo test in which we randomly assign the location of repatriation points to municipalities close to the U.S.-Mexican border. Second, we limit our control municipalities to those located closest to the U.S. Mexican frontier — which are arguably similar to the border municipalities. Additionally, we control for variables that may be correlated with violent crime in border cities including cartel presence and migration outflows (measured through total population counts). Our results are robust to all of these exercises.

Our paper contributes to the literature that studies the effects of migration on crime. Most existing studies have focused on the effects of migration in host countries. This line of research typically finds small to no effects of immigration on crime and suggests that, on average, the immigrant population offends at a lower rate compared to the native born ([Butcher and Piehl, 1998](#); [Reid et al., 2005](#); [Moehling and Piehl, 2009](#); [Wadsworth, 2010](#); [Stowell et al., 2013](#); [Bell et al., 2013](#); [Chalfin and McCrary, 2017](#)). Undocumented migrants, however may offend at a higher rate, as a result of their legal status and consequently limited opportunities in the formal sector ([Alonso-Borrego et al., 2012](#); [Baker, 2014](#); [Freedman et al., 2018](#); [Pinotti, 2017](#); [Mastrobuoni and Pinotti, 2015](#)).

We contribute to this literature by studying the effects of deportation from host countries on crime in origin countries. Only a few empirical studies have considered this topic. Most previous work uses country-level data documenting positive effects of deportations in different measures of violent crime (see [Blake, 2014](#), [Jakubowski, 2010](#), and [Madjd-Sadjadi and Alleyne, 2007](#)). The closest paper to our study is [Sviatschi \(2018\)](#) who studies the effects of U.S. deportations on gang formation in El Salvador. We contribute to this literature by examining the effects of U.S. deportation on homicide rates using micro-level data and a causal analysis within the country that receives the largest flow of U.S. deportations.

## 2 U.S. Enforcement Policy

For most of the 20th century, the United States immigration policy pertaining to undocumented immigration involved border enforcement and limited enforcement of immigration law in the nation's interior. This changed in 1986 with the passage of the Immigration Reform and Control Act (IRCA). In addition to creating an amnesty program for undocumented immigrants with long-term ties to the United States, IRCA made it illegal to knowingly hire an undocumented immigrant and authorized the levying of sanctions on employers who violated either the hiring or paperwork requirements of the law. While very little resources have been devoted to workplace enforcement and investigation ([Brownell, 2005](#)), the 1986 law marked a shift in the stance of federal policy towards undocumented immigrants and represents an initial intensification of enforcement of immigration law in the nation's interior.

The 1996 passage of the Illegal Immigrant Reform and Immigrant Responsibility Act (IIRIRA) represents the beginning of what has been dubbed by [Meissner et al. \(2013\)](#) as the “formidable deportation machine.” IIRIRA introduced several reforms that increased the speed, volume, and perhaps qualitative composition of deportation activity. First, IIRIRA streamlined the formal removal process by eliminating the requirement for judicial review for individuals ap-

prehended at the border or individuals with a prior removal order.<sup>3</sup> Second, IIRIRA redefined what constitutes an “aggravate felony” for the purposes of making unauthorized immigrants eligible for formal removal from the country. Prior to 1996, only unauthorized immigrants and legal permanent residents convicted for relatively serious felonies receiving lengthy prison sentences were eligible for deportation upon completion of their prison terms. IIRIRA rendered the definition more inclusive and made possible the retrospective application of the law for past (i.e., pre-1996) convictions for both unauthorized immigrants and legal permanent residents.

Following the September 11 terrorist attacks of 2001, resources devoted to enforcing immigration law increased greatly. With the creation of the new Department of Homeland Security, resources devoted to both border enforcement (the responsibility of the United States Customs and Border Protection) as well as interior enforcement (the responsibility of the newly-created Immigration and Customs Enforcement agency) expanded.

Finally, enforcement of immigration law has come to rely more heavily on information gathered by local law enforcement. This began with the introduction of a memorandum of understanding between willing local law enforcement agencies and the federal government (287(g) agreements) that provided training to local law enforcement and delegates authority to localities to enforce immigration law within its jurisdiction. This was enhanced by the introduction and complete rollout across United States correctional institutions of the Secure Communities program between 2008 and 2014. Secure Communities forwards finger prints normally collected in the process of booking criminal defendants following an arrest to the Department of Homeland Security (DHS). When DHS identifies a deportable alien, a 48-hour hold notice is issued to the local authorities to facilitate detention and the commencement of formal removal proceedings. Participation is not voluntary and local agencies cannot opt out of participating.

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<sup>3</sup>The alternative to formal removal is voluntary return, whereby those apprehended simply agree to leave the country. The consequences of voluntary return are much less severe, as formal removal comes with a ban on reentry for a fixed period of time and renders subsequent attempts to enter the United States illegally a felony punishable by federal prison sentences.



Secure Communities was discontinued in November 2014, and replaced with a more targeted deportation effort titled the Priority Enforcement Program.

These policy changes greatly increased the volume of deportation as well as the qualitative nature of deportations. To start, a greater proportion of deportations in recent years involve formal removal proceedings rather than voluntary returns. Second, the proportion of deportations resulting from interior enforcement has increased. Finally, criminal deportations (either due to an actual criminal conviction or an arrest and deportation through the Secure Communities program) have grown considerably.

Figure I presents historical data on total deportations, deportations through voluntary returns, and deportations through formal removals. The figure reveals that through most of the 20th century, nearly all deportations took the form of voluntary returns. This changed in 1996 with the passage of IIRIRA. By 2012, over half of all deportations resulted from a formal removal order.

Beginning in 1998, the data on removals can be separated into criminal and non-criminal removals. Panel a of Figure I shows the increasing contribution of criminal removals to formal removal proceedings. The figure reveals a sharp increase between 2008 and 2013 with the introduction and complete rollout of Secure Communities. Criminal status includes those cases in which the DHS has evidence of a conviction.<sup>4</sup> When stratified by the nationality of deportees, we see the disproportionate representation of Mexicans and Central Americans among criminal deportees (see Figure II panel b).

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<sup>4</sup>It is important to emphasize that the increase in criminal deportations since 1996 does not necessarily imply more criminal activity among the undocumented and legal permanent resident populations. As we have already noted, IIRIRA expanded the definition of a deportable offense and made the definition retroactive. In addition, the increased propensity to use formal removal proceedings rather than voluntary returns renders all who reenter a felon under federal law. The increase in the use of formal removals is likely behind the rapid growth of federal inmates serving time for immigration violations since 2000. Finally, [Miles and Cox \(2014\)](#) shows that many of the immigrants taken into federal custody under the Secure Communities are classified as low risk by ICE and that the program has had no measurable effect on crime in United States counties (see [Blake 2014](#) and [Dingeman and Rumbaut, 2010](#)).

## 2.1 Where are deported individuals sent in Mexico?

Between 1998 and 2015 immigration authorities in the United States used several methodologies to choose the location of where Mexican nationals would be deported. There were particular strategies which were more commonly implemented during this period. One of them, for example, included the deportation of individuals apprehended within 100 miles from the Mexican-U.S. frontier through the closest repatriation point. Sometimes even when undocumented immigrants were detained outside of the 100 miles distance from the frontier with Mexico, they were deported to the closest repatriation point (see [Committee on Homeland Security, 2011](#) for details). Other times, apprehended individuals were deported through a repatriation point far away in an effort to prevent them from trying to re-enter the United States. This strategy is informally called “lateral repatriation” and formally received the name of the Alien Transfer Exit Programme (see [De León, 2013](#) and [Argueta, 2016](#) for details). Some individuals were also given the chance to take a flight back to Mexico, which commonly took them to the main airports (*Benito Juárez* in the capital city or *Guadalajara* airport in Jalisco). Depending on the location, the year of immigration, and each particular individual case, immigration officers have discretion to choose alternative modes and locations of deportations ([Committee on Homeland Security, 2011](#)).

## 2.2 Who are the deportees?

In this subsection we characterize deportees in Mexico using the *Encuesta sobre Migración en la Frontera Norte de México*, known as EMIF Norte, an annual survey collected by multiple government and non-government Mexican authorities<sup>5</sup> to characterize the migrant flows on the U.S.-Mexican border. A subset of these surveys interview Mexican nationals that have been deported from the U.S. to Mexico, who are 15 years of age and older, and who have

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<sup>5</sup>Including the *Consejo Nacional de Población*, *Instituto Nacional de Migración*, *Secretaría de Trabajo y Previsión Social*, *El Colegio de la Frontera Norte*, *Secretaría de Relaciones Exteriores* and *Secretaría de Salud*.

been handed over from American to Mexican migration authorities. The interviews take place at the operating repatriation points. The data are available for 1995, and then annually between 1999 to 2016. We only use data between 2000 and 2016 due to data quality issues in previous years.

Table II shows descriptive statistics for the 2000, 2005, 2010, and 2016 surveys. Regarding demographic characteristics of deportees, the data show that they are predominantly male, young (ages 18 to 29), and have low education levels. Before crossing to the U.S. most deportees worked, they did not know anyone in the U.S. and half of them hired someone to help them cross the frontier (paying an average of USD \$4,000 in 2016). Interestingly, the average number of times that deportees have crossed to the U.S. has been increasing over time and the number of times detained by immigration authorities has been declining. At the same time, the average number of months that deportees have stayed in the U.S. before deportation has increased dramatically from 4 months in the year 2000 to 31 months in 2016 — possibly because more restrictive border enforcement leads unauthorized migrants to stay in the U.S. longer due to a higher risk of being apprehended upon re-entering.

While in the U.S., half of the deportees were economically active and report to work primarily in the services, construction, and agriculture sectors. Finally, concerning future expectations, most deportees report that they will not return immediately to the U.S. (that is in the next week), but approximately half of them report to have intentions to return in the medium to long term.

### **3 Data and Methodological Strategy**

Our empirical strategy leverages the fact that deportees from the United States to Mexico pass through a small number of repatriation points, most on the U.S.-Mexican border but some in the interior. To be specific, we test for an interaction effect between surges in deportations

and the location of repatriation points on homicide rates and drug-related crime. Our empirical strategy is inextricably linked to the institutional and data infrastructures of the United States and Mexico as they pertain to deportations and crime. Hence, we begin by describing the data sets used in this paper. We then detail our empirical strategy for testing whether deportation activity has an effect on crime.

We should mention an important qualification: We are studying the impacts of deportation on violent crime in a specific region within Mexico. Given the historically large volume of population movements between Mexico and the United States, it is not immediately obvious that our findings generalize to other countries that have seen increases in criminal deportations from the United States (El Salvador, Guatemala, or Honduras for example). Mexico has a long history of circular migration and there are strong ties between specific Mexican sending communities and receiving communities in the United States. Central American migrants, on the other hand, may have been more disconnected from their homelands upon deportation given the greater physical distance from the United States and more recent migration history.

### **3.1 Data**

We employ various data sources to measure deportation activity from the United States and crime rates in Mexico. Our principal data source for the geography of deportation activity comes from the *Unidad de Política Migratoria* (UPM) of the Mexican *Secretaría de Gobernación*. The UPM data identifies the location of all repatriation points that operated between 1998 and 2015. They account for 22 repatriation points located in 20 different border municipalities (the U.S.-Mexican frontier spans throughout 38 Mexican municipalities) and 2 repatriation points located within Mexico (*Benito Juárez* in the capital city and *Guadalajara* airport in *Jalisco*). To characterize the annual flow of deportees from the United States to the Mexican repatriation points, we use annual deportee counts from 1998 to 2015 from the De-

partment of Homeland Security.

Regarding our key dependent variable, we employ municipal-level homicide rates as a total, by gender, and age. Homicide rates come from INEGI, the Mexican Statistics Agency, and are available between 1995 and 2016. Descriptive statistics of these variables are presented in Table I. Average homicide rates show a substantial geographic variation during the period of analysis and do not show a concentration in the U.S.-Mexican border region (see Figure IV and V).

Figure III presents trends in homicide rates averaged over all municipalities, as reported by INEGI. Mexican homicide rates decreased between 1998 and 2008, and then increased drastically between 2008 and 2011. According to several studies, during that period, violence in Mexico dramatically intensified due to three main factors (Robles et al., 2013): exogenous changes to the narcotics market, including above all the relative success of Colombia at counter-narcotics operations and drug seizures (Castillo et al., 2018); the increased fragmentation of drug cartels into numerous smaller organizations and criminal cells; and the militarized fight against drugs and drug trafficking that began during the administration of President Felipe Calderón (Dell, 2015).

### 3.2 Research Methodology

The sign of the causal effects of deportation from a host country (e.g., the United States) on the crime levels of an origin country (e.g., Mexico) is theoretically ambiguous and likely to vary across alternative national settings. To the extent that local authorities take the appropriate steps to reintegrate their nationals, or to the extent that deportees have strong family and social ties in their country of origin, deportation flows may not impact crime at all. Moreover, it is entirely possible that migrants, being a self-selected group oriented towards work, may be less likely to offend, and thus their repatriation may actually lower the number of crimes

per capita.

On the other hand, one can identify causal channels through which deportations may increase crime rates in the receiving country. First, United States policy selectively deports individuals who become involved with the criminal justice system either through convictions, or in more recent years, simple arrests and bookings. To the extent that those involved with the United States criminal justice system are more likely to commit crime in their home country (either due to individual heterogeneity or as a result of their criminal justice involvement), deportations could increase crimes per capita. Second, even if the deportees had no previous criminal history, those with very weak ties to their origin nation (for example, immigrants who migrated to the United States at a young age, who have been in the United States for many years, or whose extended familial network resides in the United States) may have scant employment opportunities in the home country and turn to crime as a result. Finally, deportees themselves may be at an elevated risk of victimization. To the extent that their social ties are weak due to time spent in the United States, or they are being deported to a repatriation point far away from their region of origin, deportees may be easy targets. Moreover, immigrants with family in the United States may present easy targets for extortion.

To test for an effect of deportation flows from the United States on Mexican violent crime, we test for an interaction effect between the physical location of repatriation points and deportations flows on homicide rates. Formally, we estimate the effects of deportations on violent crime using the following specification:

$$V_{mt} = \alpha_1 \text{Dep}_t \times \text{Rep. Center}_m + \gamma_m + \gamma_t + X_{mt}\phi' + \epsilon_{mt} \quad (1)$$

where  $V_{mt}$  stands for homicide rates by municipality  $m$ , and year  $t$ ;  $\text{Dep}_t$  corresponds to the deportation flows measured in thousands of individuals;  $\text{Rep. Center}_m$  is a dummy variable for the 22 municipalities with repatriation centers;  $\gamma_m$  and  $\gamma_t$  are fixed effects by municipality

and year; and  $X_{mt}$  represents a matrix of municipal time-varying controls. In our main estimates the only municipal controls included in this matrix is population. In our robustness test we also include carter presence, migration outflows, and department-year fixed effects. Standard errors are clustered by municipality and corrected for heteroskedasticity.

## 4 Results

Estimation results for the specification described by equation (1) are presented in Table III. We systematically find that surges of deportation flows increase homicide rates in municipalities with repatriation centers. Specifically, our estimates suggest that when deportation flows from the United States increase by 1,000 individuals, homicide rates in Mexican municipalities with repatriation centers increase by 0.24 (see column 1 of Panel A). This corresponds to a 1.6 percent change over the mean municipal homicide rate.

When examining the effects of deportation flows on homicide rates by gender and age, we find that most effects are primarily driven by increases in the homicide rate of young males (ages 20 to 39), but we also find a significant rise for minor's homicide rates. These results are in line with a large body of literature documenting larger violent crime rates for young males (see [Cornwell and Trumbull, 1994](#) and [Freeman, 1996](#) for examples). We unexpectedly find a positive, but small, effect of deportation flows on homicide rates for females older than 40 years. We speculate that these effects might be primarily driven by victimization, as this population typically offends at a lower rate.

### 4.1 Robustness Exercises

Given our identification strategy, we are effectively comparing the changes in violent crime observed in municipalities with and without repatriation points when there are surges of de-

portation flows. Because our estimates include fixed effects by municipality and year, they are not threatened by static differences between municipalities, nor by aggregate time trends. For instance, differences in violent crime that are explained by static characteristics, such as being near the United States border, are not a threat to our identification. Additionally, changes in macroeconomic trends in the United States or the Mexican economy as a whole are accounted for by the time fixed effects.

Our identification strategy will only be threatened if, for example, there are other covariates changing in time, which also affect areas with and without repatriation points in different ways and the time variation is correlated with changes in deportation flows. It may be the case, for example, that population outflows changed during 1998 and 2015 and that these changes are occurring disproportionately in municipalities with repatriation points in the same years when deportation flows increase. To account for this possibility, we include controls for population in all of our estimates.<sup>6</sup> Our results are also robust to the inclusion of department and year interactions.<sup>7</sup>

Another possible threat is that changes in drug trafficking flows from Mexico to the United States may disproportionately affect violence in municipalities closer to the U.S.-Mexican border. Since most municipalities with repatriation points are located in the border region, it could be argued that we are artificially picking up increases in homicide rates closer to the border that are caused by drug trafficking, not deportations. To test for this possibility, we use data on cartel's presence from [Coscia and Rios \(2012\)](#) and control for this covariate in our analyses. Our results are robust to the inclusion of this information.<sup>8</sup> In Figure V, we show the geographic distribution of drug-related crime. The data is available at the municipality level for the period 2007 to 2011 and comes from the Mexican Vice Presidency. The graphs

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<sup>6</sup>Municipal population comes from the population censuses and was collected by the *Instituto Nacional de Estadística y Geografía* (INEGI), the Mexican statistics agency. It is projected with information from the censuses collected every five years beginning in 1995. The last population census was collected in 2010.

<sup>7</sup>The results of this exercise are available upon request. We did not include them in the tables to save space.

<sup>8</sup>The estimates are available upon request. Cartel presence is available from 1995 to 2010.



show that drug related crime is not concentrated along the U.S.-Mexican border during our period of analysis.

Finally, it is possible that municipalities closer and further away from the U.S.-Mexican border are systematically different and that these differences induce variation in violent crime that is not explained by the location of repatriation points when there are surges of deportation. To test for this, we carry out several exercises. First, we divide the country in three groups of municipalities according to the distance of each municipality to the U.S.-Mexican frontier (see the division in Figure VI). We then compute our estimates for i) all municipalities, ii) municipalities included in 2/3 of the sample which are closer to the border, and iii) the municipalities included in 1/3 of the sample that is closest to the border. Second, within the municipalities that are closest to the U.S.-Mexican border we randomly assign the location of repatriation points as a placebo test for the validity of our estimates.<sup>9</sup> If our results are not driven by spurious correlations, we should not see effects of deportation flows on the fake locations of repatriation centers. Our results are robust to all of these exercises (see Panels B, C, and D in Table III).

## 5 Conclusion

This paper assesses whether deportation flows affect crime in receiving countries. We focus on the case of deportations from the United States to Mexico, the main recipient country of deportees from the United States. Our results suggest that municipalities with repatriation centers see large increments in homicide rates with deportation surges. The results are robust to the inclusion of several controls and placebo tests.

Due to limitations in the data, we cannot confidently assess whether deportees are predom-

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<sup>9</sup>In another exercise, we randomly assign repatriation points to any municipality in Mexico and find that there are no significant effects of deportation exposure on homicide rates.

inantly the victims or the perpetrators of these crimes. Future research should explore the mechanisms driving the effects we document as new data becomes available.

Our analysis here is limited to the contemporaneous effect of deportation activity on crime. One might hypothesize that there are longer terms effects of sustained deportations on local crime rates. For example, if those seeking to victimize vulnerable migrants relocate closer to repatriation points, the crime fundamentals of areas with greater exposure to deportees may be altered by a sustained influx of deportees. Moreover, to the extent that deportees themselves turn to crime as a result of being socially isolated or imperfectly reintegrated into the Mexican society, longer term effects may differ from the short term contemporaneous estimates here.

We should emphasize that the findings here may not necessarily generalize to other countries receiving deportees. For example, the Central American nations of Guatemala, El Salvador, and Honduras have recently received much attention due to elevated gang activity, having the highest homicide rates in the world, and the ensuing migration of unaccompanied minors fleeing violence to the United States. Moreover, the main gangs operating in these nations have direct ties to street and prison gangs in the United States, presenting a *prima facie* link between deportation activity and crime rates in receiving nations. To be sure, the volume and qualitative nature of migratory flows in both directions between the United States and Mexico likely differs fundamentally from migratory flows between the United States and Central America. Future research on this relationship in other national settings is certainly merited.

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**Table I:** Descriptive Statistic - Mexican Crime and Violence Data

Variable	Obs.	Mean	St. Deviation
<b>Crime-related Variables</b>			
Homicide Rates (per 100,000 indv.), 1998-2015	44040	14.003	34.05
Male Homicide Rates (per 100,000 indv.), 1998-2015	44040	11.345	29.45
Female Homicide Rates (per 100,000 indv.), 1998-2015	44040	1.202	6.14
Minors (18-) Homicide Rates (per 100,000 indv.), 1998-2015	44040	1.456	6.89
Male 20-39 Homicide Rates (per 100,000 indv.), 1998-2015	42715	6.909	22.28
Female 20-39 Homicide Rates (per 100,000 indv.), 1998-2015	42026	0.615	3.77
Male 40+ Homicide Rates (per 100,000 indv.), 1998-2015	42678	4.792	13.59
Female 40+ Homicide Rates (per 100,000 indv.), 1998-2015	41924	0.647	4.85
<b>Other Variables</b>			
Total Removals (Ths indv.), 1998-2015	44280	206.987	66.05
Criminal Removals (Ths indv.), 1998-2015	44280	89.247	34.35
Non-criminal Removals (Ths indv.), 1998-2015	44280	117.740	36.57



**Table II:** Characterization of Mexican Deportees

		2000	2005	2010	2016
DEMOGRAPHIC CHARACTERISTICS					
Gender	Male Female	79.8% 20.2%	85.0% 15.0%	84.0% 16.0%	88.5% 11.5%
Age	18-29 30-39 40-59 60 or more	66.2% 25.1% 8.4% 0.4%	67.0% 26.1% 6.7% 0.1%	54.4% 30.9% 14.5% 0.3%	50.0% 30.3% 18.9% 0.7%
Schooling Level	None Elementary Secondary High School Technical/normal Professional/higher	48.7% 42.1% 6.2% 2.3% 0.7% 0.0%	3.5% 33.0% 47.3% 14.0% 1.1% 1.1%	2.7% 35.0% 43.9% 16.3% 0.6% 1.6%	4.2% 31.3% 43.8% 18.1% 0.7% 2.0%
Marital status	Single Married Widowed Divorced	48.7% 48.3% 2.3% 0.7%	44.7% 51.3% 3.5% 0.5%	37.6% 57.9% 4.1% 0.4%	39.9% 53.3% 0.4% 6.4%
Household Size		4.43	4.30	3.82	3.69
Head of household	Yes No	46.2% 53.8%	47.1% 52.9%	58.1% 41.9%	58.5% 41.5%
BEFORE CROSSING THE BORDER TO THE U.S.					
Worked in Mexico 30 days prior to crossing?	Yes No	72.2% 27.8%	70.4% 29.6%	89.5% 10.5%	67.4% 32.6%
Knows someone in the border city where crossed to the U.S.?	Yes No	19.2% 80.8%	15.4% 84.6%	9.1% 90.9%	18.4% 81.6%
Average number of times to have crossed to the U.S. prior to this one		1.0	0.6	0.9	2.1
		2000	2005	2010	2016
Average number of times to have been detained by immigration authorities <sup>a</sup>		1.9	1.6	1.4	1.2
Average number of attempts to cross the border before being captured		1.2	1.4	0.7	1.1
Hired someone to cross the border this time?	Yes	17.5%	52.2%	69.8%	47.3%
	No	82.5%	47.8%	30.2%	52.7%
Average USD paid to the person hired to cross		\$ 657	\$ 831	\$ 1,555	\$ 3,962
CHARACTERISTICS WHILE IN THE U.S.					
Average months that stayed in the U.S.		4.1	2.8	29.1	31.4
Main reason to have crossed to the U.S.	Work Family/friends Other	90.5% 7.1% 2.4%	92.3% 6.4% 1.3%	87.4% 7.0% 5.7%	90.0% 7.8% 2.1%
	Yes No	62.1% 37.9%	12.8% 87.2%	80.8% 19.2%	64.6% 35.4%
Have any friends or family in the U.S.?	Yes No	68.7% 31.3%	12.5% 87.5%	29.2% 70.8%	54.4% 45.6%
Worked in the U.S.?	Yes No	1.9	1.5	2.7	1.7
How many jobs had in the U.S. this last time		1.9	1.5	2.7	1.7
Sector of the economy where the respondent worked while in the U.S.	Agriculture Construction Industry Commerce Domestic Service Other services Other	19.2% 7.2% 9.8% 8.4% 9.3% 26.9% 19.2%			13.9% 13.4% 5.7% 2.9% 4.1% 34.4% 25.6%
FUTURE EXPECTATIONS					
Crossing again into the U.S. in the next 7 days?	Yes No	70.1% 29.9%	80.9% 19.1%	67.5% 32.5%	20.4% 79.6%
	Yes No	54.6% 45.4%	72.5% 27.5%	48.5% 51.5%	49.2% 50.8%
N <sup>a</sup>		7,578	6,136	10,455	5,882

<sup>a</sup> Changes in the sample size between 2000 and 2010 are due to changes in the repatriation points selected to perform the survey and cost-reducing measures. Changes in the sample size of 2016 are due to changes in the sampling methodology.

**Table III:** Effects of Deportations on Municipal Homicides Rates, 1998-2015

	Total (1)	Male (2)	Female (3)	Minors 18- (4)	Male 20-39 (5)	Female 20-39 (6)	Male 40+ (7)	Female 40+ (8)
<b>Panel A: Full Sample (All Municipalities)</b>								
Dep. (Thds Indv) $\times$ Rep. Center	0.236** (0.109)	0.197** (0.089)	0.015 (0.009)	0.024** (0.012)	0.143** (0.059)	0.010 (0.007)	0.056 (0.035)	0.006*** (0.002)
R-squared	.0187	.018	.00224	.00361	.0188	.0122	.0137	.00647
Obs.	44040	44040	44040	44040	42715	42026	42678	41924
Criminal (Thds Indv) $\times$ Rep. Center	0.373** (0.158)	0.312** (0.129)	0.023 (0.015)	0.038** (0.018)	0.241** (0.098)	0.017 (0.012)	0.075* (0.042)	0.009*** (0.004)
R-squared	.0179	.0173	.00216	.00343	.0183	.0121	.0133	.00645
Obs.	44040	44040	44040	44040	42715	42026	42678	41924
Non-Criminal (Thds Indv) $\times$ Rep. Center	0.439** (0.221)	0.366** (0.182)	0.028* (0.017)	0.045* (0.024)	0.254** (0.111)	0.019 (0.013)	0.114 (0.077)	0.011** (0.004)
R-squared	.0189	.0181	.00226	.00365	.0187	.0122	.0139	.00648
Obs.	44040	44040	44040	44040	42715	42026	42678	41924
Outcome Mean	13.99	11.33	1.20	1.45	6.71	.58	4.61	.62
<b>Panel B: Closest municipalities to U.S.-Mexican Border (2/3 of sample)</b>								
Dep. (Thds Indv) $\times$ Rep. Center	0.221** (0.109)	0.183** (0.089)	0.014 (0.009)	0.023* (0.012)	0.133** (0.059)	0.010 (0.007)	0.052 (0.035)	0.005** (0.002)
R-squared	.0333	.0317	.00561	.00734	.0285	.0137	.0232	.0086
Obs.	29423	29423	29423	29423	28645	28136	28608	28038
Criminal (Thds Indv) $\times$ Rep. Center	0.339** (0.157)	0.283** (0.129)	0.021 (0.015)	0.035* (0.018)	0.218** (0.097)	0.015 (0.012)	0.067 (0.042)	0.008** (0.003)
R-squared	.0323	.0308	.00544	.00699	.0279	.0136	.0225	.00855
Obs.	29423	29423	29423	29423	28645	28136	28608	28038
Non-Criminal (Thds Indv) $\times$ Rep. Center	0.418* (0.221)	0.347* (0.182)	0.027 (0.017)	0.045* (0.024)	0.240** (0.111)	0.018 (0.013)	0.108 (0.077)	0.010** (0.004)
R-squared	.0337	.032	.00567	.00746	.0285	.0137	.0237	.00862
Obs.	29423	29423	29423	29423	28645	28136	28608	28038
Outcome Mean	14.24	11.59	1.17	1.48	7.24	.65	4.35	.52

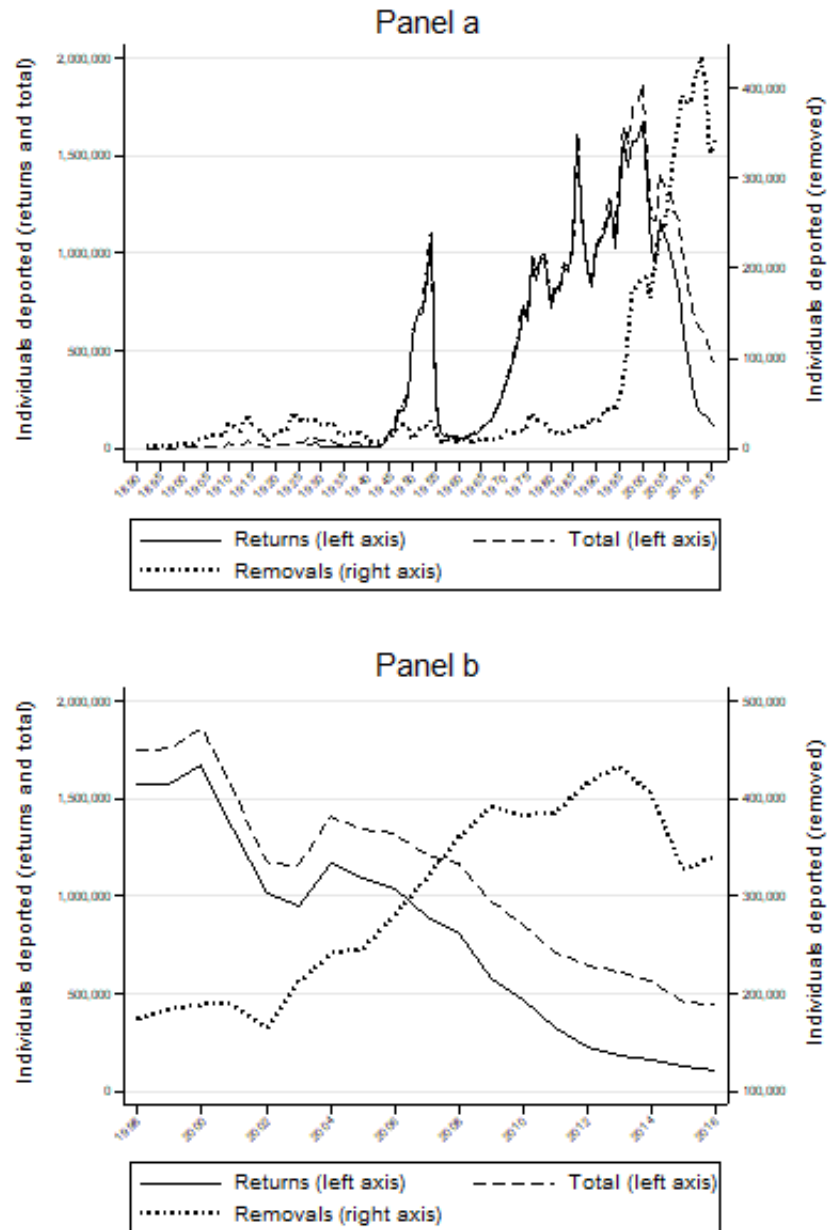
Notes: Each coefficient corresponds to a separate regression. All regressions include fixed effects by municipality and year and controls for population. Standard errors are clustered at the municipality level. Estimates with \*\*\* are significant at the 1%, those with \*\* are significant at the 5%, and those with \* are significant at the 10% level.

**Table IV (cont'd):** Effects of Deportations on Municipal Homicides Rates, 1998-2015

	Total (1)	Male (2)	Female (3)	Minors 18- (4)	Male 20-39 (5)	Female 20-39 (6)	Male 40+ (7)	Female 40+ (8)
<b>Panel C: Closest municipalities to U.S.-Mexican Border (1/3 of sample)</b>								
Dep. (Thds Indv) $\times$ Rep. Center	0.193* (0.115)	0.161* (0.094)	0.013 (0.010)	0.019 (0.013)	0.116* (0.062)	0.009 (0.008)	0.045 (0.037)	0.005** (0.002)
R-squared	.0577	.0541	.00995	.0222	.0452	.0162	.0442	.00957
Obs.	14706	14706	14706	14706	14329	14058	14297	14019
Criminal (Thds Indv) $\times$ Rep. Center	0.274* (0.166)	0.228* (0.135)	0.018 (0.016)	0.027 (0.019)	0.179* (0.102)	0.013 (0.013)	0.051 (0.045)	0.007* (0.004)
R-squared	.0566	.0531	.0097	.0217	.0446	.0161	.0432	.00949
Obs.	14706	14706	14706	14706	14329	14058	14297	14019
Non-Criminal (Thds Indv) $\times$ Rep. Center	0.384* (0.232)	0.319* (0.191)	0.025 (0.018)	0.039 (0.025)	0.219* (0.116)	0.017 (0.013)	0.100 (0.081)	0.009* (0.005)
R-squared	.0582	.0545	.0101	.0225	.0454	.0163	.0451	.00959
Obs.	14706	14706	14706	14706	14329	14058	14297	14019
Outcome Mean	16.76	13.93	1.21	1.63	9.23	.72	4.70	.49
<b>Panel D: Placebo Test (Random municipalities close to the U.S.-Mexican frontier)</b>								
Dep. (Thds Indv) $\times$ Random Frontier Mun.	-0.001 (0.018)	0.000 (0.015)	0.001 (0.002)	-0.002 (0.002)	-0.003 (0.012)	0.001 (0.001)	0.003 (0.005)	-0.000 (0.001)
R-squared	.055	.0516	.00938	.0211	.0431	.0154	.0422	.00917
Obs.	14706	14706	14706	14706	14329	14058	14297	14019
Criminal (Thds Indv) $\times$ Random Frontier Mun.	0.002 (0.037)	0.004 (0.032)	0.001 (0.004)	-0.004 (0.004)	-0.002 (0.025)	0.001 (0.003)	0.006 (0.009)	-0.000 (0.002)
R-squared	.055	.0516	.00939	.0211	.0431	.0154	.0422	.00916
Obs.	14706	14706	14706	14706	14329	14058	14297	14019
Non-Criminal (Thds Indv) $\times$ Random Frontier Mun.	-0.004 (0.027)	-0.003 (0.024)	0.001 (0.003)	-0.002 (0.003)	-0.007 (0.018)	0.001 (0.002)	0.004 (0.008)	-0.001 (0.001)
R-squared	.055	.0516	.00938	.0211	.0431	.0154	.0421	.00918
Obs.	14706	14706	14706	14706	14329	14058	14297	14019

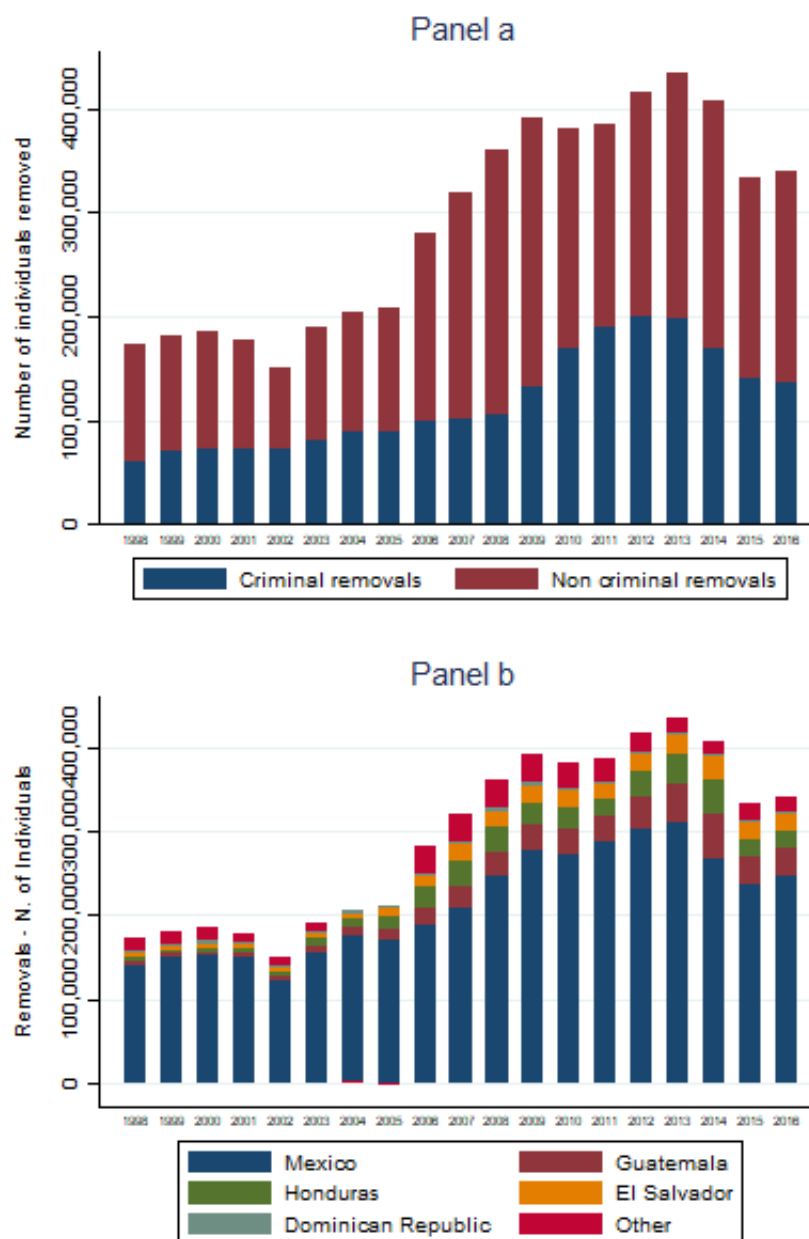
Notes: Each coefficient corresponds to a separate regression. All regressions include fixed effects by municipality and year and controls for population. Standard errors are clustered at the municipality level. Estimates with \*\*\* are significant at the 1%, those with \*\* are significant at the 5%, and those with \* are significant at the 10% level.

**Figure I: DHS Deportations (Number of Individuals)**



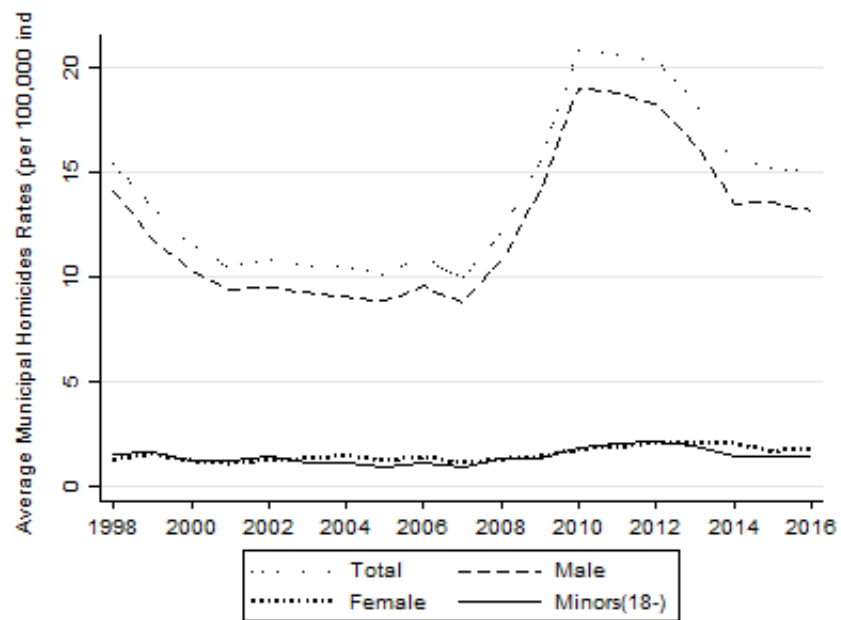
*Notes:* Removals are compulsory and account for the confirmed movement of an inadmissible or deportable alien out of the United States based on an order of removal. An alien who is removed has administrative or criminal consequences placed on subsequent reentry owing to the fact of the removal. Returns are the confirmed movement of an inadmissible or deportable alien out of the United States not based on an order of removal. Source: United States Department of Homeland Security.

**Figure II: Removals by Country of Nationality and Criminal Status (Number of Individuals)**

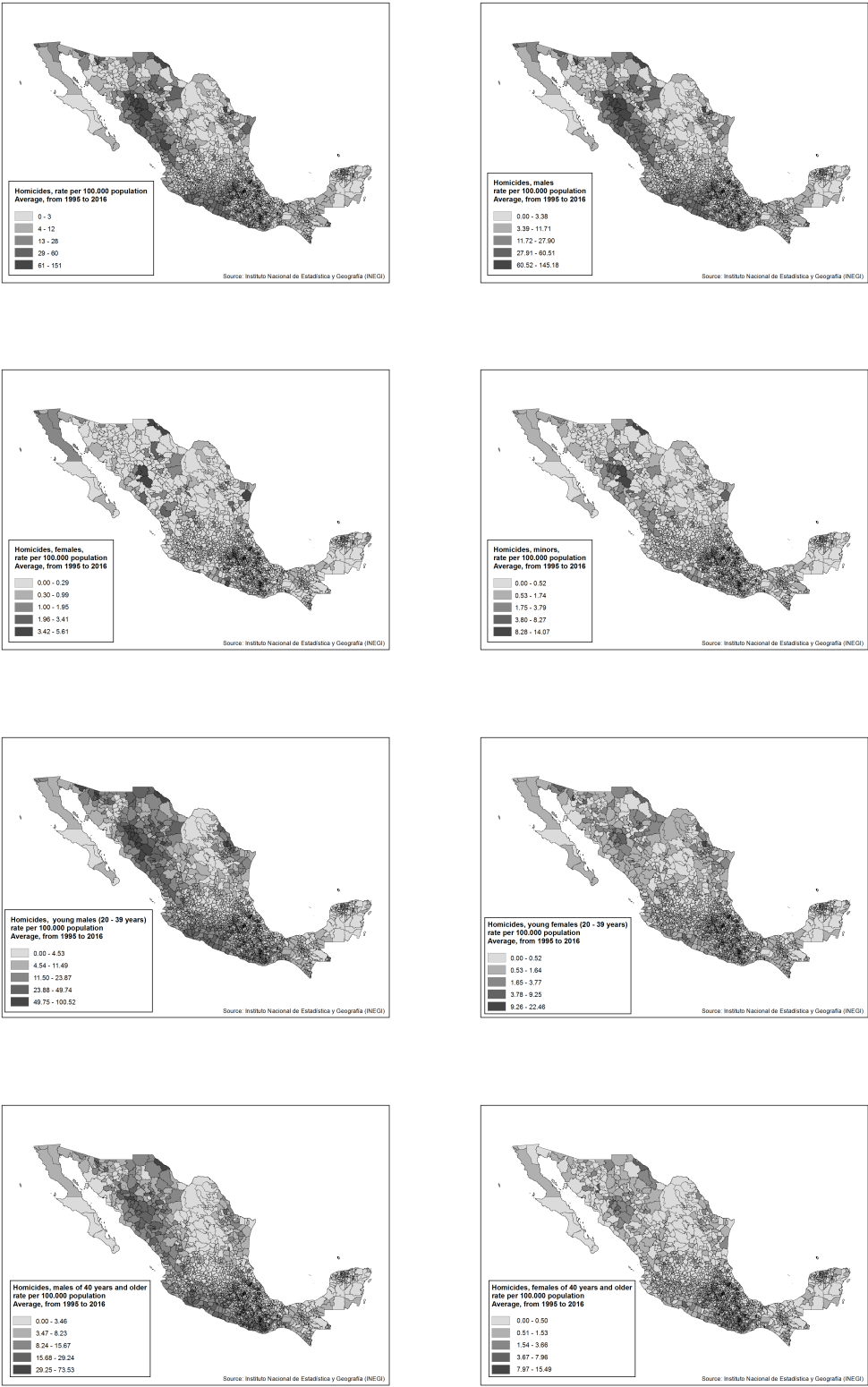


*Notes:* Removals are compulsory and account for the confirmed movement of an inadmissible or deportable alien out of the United States based on an order of removal. An alien who is removed has administrative or criminal consequences placed on subsequent reentry owing to the fact of the removal.  
Source: United States Department of Homeland Security.

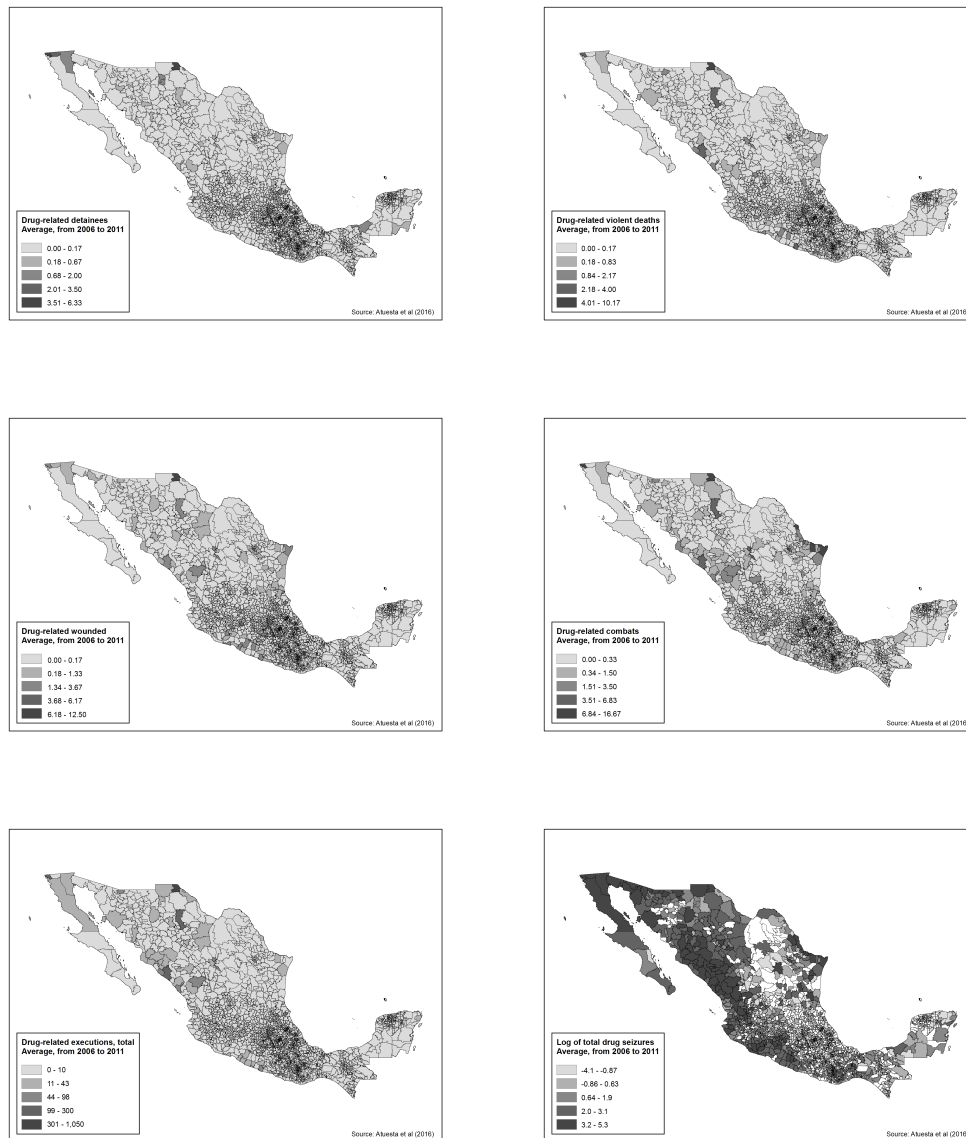
**Figure III:** Municipal Mexican Homicide Rates



**Figure IV: Geographic Distribution of Homicides**



**Figure V:** Geographic Distribution of Drug-Related Crime, 2007-2011





**Figure VI:** Terciles of Distance to the U.S.-Mexican Frontier

