Violence in Mexico, Return Intentions, and the Integration of Mexican Migrants in the US

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Abstract

This paper studies how violence in migrants' source regions shapes their cultural and economic integration, focusing on Mexican migrants in the US during the war on drugs. Combining administrative data linking migrants to their origin municipalities with an instrumental variable approach that exploits pre-war drug trade organization locations within Mexico and Colombian cocaine supply shocks, I find that violence exposure increases naturalization and marriage to US citizens, particularly to naturalized Mexicans, with larger effects for recent and less-educated migrants. Adult labor market outcomes are not significantly affected, but migrants increase educational investment in their children. Taken together, the results point to a decline in return intentions and a broader effort to establish permanence in the US.

Keywords: Integration, Violence, Return Migration, US-Mexico Migrants

JEL codes: J15, J61, J12, K42

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1 Introduction

Migration from developing to developed countries has increased substantially over the past two decades, with many migrants originating from regions experiencing violence, political instability, or economic crises (IMF, 2020). A central question is whether and how these migrants integrate into host societies. While extensive research examines how destination-country policies shape integration, far less is known about the role of conditions in migrants' home countries, despite strong theoretical reasons to expect they matter. When home conditions change, so might the incentives to acquire skills, form social ties, and settle permanently.

This paper studies how violence in migrants' source regions affects their integration at the destination. Violence may operate through multiple channels. It may increase financial obligations to family at origin, raising migrants' labor supply. At the same time, exposure to violence may generate psychological distress that reduces productivity. Violence also affects the expected value of return migration. When conditions at origin deteriorate, the option to return becomes less attractive, strengthening incentives to invest in the host country (Adda et al., 2022; Dustmann, 1993, 1999). Which channel dominates is an empirical question. I therefore examine several margins of integration, including labor supply and wages, human capital accumulation, and naturalization and intermarriage, which capture civil and cultural integration, respectively.

To answer this question, I focus on Mexican migrants in the United States during Mexico's war on drugs. Mexicans are the largest immigrant group in the US. Despite high employment rates, they exhibit persistently low naturalization and intermarriage rates, raising questions about their long-term integration (Peri and Rutledge, 2021; Gonzalez-Barrera, 2017; Ordway, 2017). Mexico also experienced a sharp increase in violence following President Calderón's 2006 crackdown on drug trafficking organizations. The national homicide rate rose by roughly 150 percent by 2012, with substantial variation across municipios (municipalities).

A key advantage of this setting is the ability to link migrants to their origin municipios. Most existing data sources record only migrants' country of birth, restricting the majority of prior work to cross-country variation in home-country conditions. Yet local conditions are likely more salient to migrants than national aggregates, which often bundle multiple simultaneous shocks. This is particularly true for violence, whose effects have been shown to be localized.[1] I overcome this limitation using administrative data from Mexico's Matrícula Consular (MCAS) identification program, which records the municipio of birth for Mexican migrants obtaining consular IDs in the US. Combining these data with rich variation in violence allows me to examine how migrants respond to localized conditions within Mexico.

[1] Prior work from Mexico and the United States shows that the effects of violence on exposed populations are highly localized, dissipating with distance from the point of exposure (Casey et al., 2018; Chang and Padilla-Romo, 2023; Mikdash and Zaiour, 2024).

Using the MCAS data, I construct a measure of migrants' exposure in each US commuting zone to violence in their municipios of origin. This measure is a weighted average of homicide rates across Mexican municipios, where weights reflect the share of migrants in each commuting zone originating from each municipio. Two challenges arise in estimating causal effects. First, migrants may have selected into migration in response to violence. I address this by focusing on Mexicans who arrived in the US between 2000 and 2006, before the drug war began. These migrants did not select into migration based on war-related violence and were not directly exposed to it.

Second, local violence may be endogenous to other time-varying municipio factors, such as economic shocks, that could independently affect migrants' integration. I address this using an instrumental variable that exploits the pre-war geographic distribution of drug trafficking organizations (DTOs) across Mexican municipios and temporal shocks to Colombian cocaine supply. Municipios with pre-war DTO presence experienced disproportionately large increases in violence, as Calderón's strategy of targeting cartel leaders triggered retaliatory actions and internal conflicts. This pattern intensified after 2007, when a surge in Colombian cocaine seizures disrupted supply routes to Mexico (Castillo et al., 2020). The instrument leverages the fact that US commuting zones with more migrants from DTO municipios were differentially exposed to violence in years with greater cocaine seizures.[2]

The results show that heightened violence in migrants' municipios of origin increases naturalization by 43 percent relative to the 2006 baseline mean, implying improved civil integration. I also find a 2.5 percentage point increase in the likelihood of marrying a US citizen, a 29 percent increase relative to baseline. Disaggregating by spouse nationality, marriages increase to both US-born natives and naturalized Mexicans. Notably, the effect on marriage to Mexican-born naturalized citizens is larger, a 42 percent increase relative to baseline.

In contrast, I find no evidence that violence affects migrants' employment, hours worked, wages, or adult human capital accumulation. The 2SLS point estimates are close to zero, and the confidence intervals rule out large effects. Migrants in this sample are already highly attached to the labor market —the average migrant is 31 years old with a 70 percent baseline employment rate —leaving limited scope for adjustment along these margins. Despite the absence of effects for adults, I find evidence of increased educational investment in migrants' children, particularly those born in Mexico, reflected in improved English proficiency and reduced Spanish dominance at home. Thus, responses occur primarily through institutional and family-related decisions, including naturalization, marriage, and investments in children's human capital.

The effects on naturalization and marriage vary by migrant characteristics. The increase in

[2]The identification strategy has a shift-share-like structure, where a common shock (cocaine seizures) is distributed across commuting zones through cross-sectional variation in the municipal origins of migrants. It also resembles an intensity difference-in-differences design.

marriages is more evident among recent migrants who have spent up to three years in the US. In contrast, the increase in naturalization seems to be driven by those with seven to ten years of residence, coinciding with the eligibility window for citizenship following permanent residency. Effects on marriage to US citizens are also larger for less-educated migrants, who typically rely on family-based routes to secure permanent status.

Taken together, the findings are consistent with a decline in return intentions as the main mechanism. As violence intensifies in migrants' source regions, migrants make destination-specific investments that reflect permanence in the United States. The form of investment depends on available opportunities. Longer-tenure migrants who meet eligibility requirements pursue naturalization, while shorter-tenure migrants opt for marriage that can accelerate their path to naturalization. Similarly, parents increase investments in their children's human capital, particularly children born in Mexico who lack automatic citizenship. To further explore the return intentions channel, I use data from the 2010 Mexican Census to estimate the effect of violence on return migration flows from the US to Mexico. The results suggest that there is a reduction in return migration, though estimates are imprecise as the Mexican Census excludes the years of peak violence (2011-2012).

I provide extensive evidence supporting the instrument's validity, showing that it is uncorrelated with migrant integration outcomes before the war on drugs. Migrants from DTO and non-DTO municipios were on similar integration trends prior to 2006, and event-study estimates confirm that effects emerge only after the onset of violence. Furthermore, violence exposure does not predict differential attrition from the sample, ruling out compositional changes as a driver of these effects. The findings are robust to alternative sample choices and specifications, and the exclusion of individual Mexican states or influential DTO municipios. Finally, a falsification test using Central American migrants —who share similar characteristics and reside in the same commuting zones but lack ties to Mexican municipios —shows no effects, confirming that the findings are driven by exposure to violence through Mexican migrant networks, not local confounds.

This paper contributes to the literature on the determinants of migrant economic and cultural integration. Most work focuses on conditions at the destination, including language policies, residential placement, and exposure to hate crimes or anti-immigrant hostility (Foged, Hasager and Peri, 2022; Jaschke, Sardoschau and Tabellini, 2025; Steinhardt, 2018; Gould and Klor, 2016). This paper shows that localized conditions in migrants' home regions also shape integration decisions by altering expected return opportunities after migration.

Prior work on origin-country conditions is limited and has primarily exploited cross-country variation in macroeconomic factors (Albert and Monras, 2022; Dustmann et al., 2024; Nekoei, 2013).[3] Two recent exceptions are closest to my paper. Bassetto and Monteiro (2024) study ter-

[3]These papers study how fluctuations in inflation, exchange rates, and GDP affect migrants' labor supply through relative price changes. A related strand examines their effects on mental health and well-being (Akay et al., 2017;

rorist attacks and find effects on survey measures of return intentions and job search in Germany within 90 days, but rely on variation across origin countries and examine very short-run responses to discrete events. Aksoy, Khanna, Marino and Tumen (2024) exploit local variation and show that violence in Syrian refugees' home districts improves children's educational outcomes in Türkiye.

I build on these papers in two main ways. First, I exploit within-country variation at the municipal level using Matrícula Consular data in a novel manner, yielding more precise estimates of conditions migrants are directly informed about and connected to.[4] Second, I study sustained violence[5] and its longer-term effects on adult migrants, examining outcomes that reflect revealed preferences over permanence.[6] I show that integration responds primarily through margins related to legal permanence and family formation, rather than through labor market adjustment as in the case of refugees where initial employment rates are substantially low. I also confirm the findings of Aksoy et al. (2024) on children's education, indicating that violence in source regions has family-wide integration effects.

The paper also speaks to the literature on temporary versus permanent migration, which emphasizes that expected duration of stay shapes migrant behavior (Adda et al., 2022; Dustmann, 2000; Dustmann and Mestres, 2010; Dustmann and Görlach, 2016). Notably, Cortes (2004) shows that refugees, who cannot return, experience faster earnings growth than economic migrants. This complements recent work on refugees' return intentions (Alrababah et al., 2023; Adema et al., 2024; Beaman et al., 2022). Instead, I examine a group of economic migrants, typically classified as temporary, who nonetheless respond to violence in their origin communities by pursuing permanent settlement, suggesting that the return option is endogenous to origin-country conditions. In this sense, the distinction between "temporary" and "permanent" migration is not fixed at arrival, but evolves with conditions in migrants' home communities. More broadly, the paper adds to the literature on the effects of Mexico's drug war by documenting cross-border spillovers onto migrants in the United States (Basu and Pearlman, 2017; Brown, 2018; Dell, 2015; Velásquez, 2020).

The rest of the paper is organized as follows: Section 2 describes the institutional context of Mexico's war on drugs. Section 3 presents the data. Section 4 outlines the empirical strategy. The results are reported in Section 5, Section 6 presents robustness analyses, and Section 7 discusses mechanisms. Finally, Section 8 concludes.

Nguyen and Connelly, 2018; Nguyen and Duncan, 2020). Because macroeconomic conditions are correlated with each other and with other country-level factors, it is difficult to identify the specific channel affecting migrants.

[4]This paper highlights the international diffusion of shocks through migrant networks, complementing work that uses Matrícula data to study the reverse direction, e.g., US policy effects on Mexico (Caballero, 2022; Caballero et al., 2023; Pearson, 2023; Tian et al., 2022).

[5]Sustained criminal violence differs conceptually from terrorist attacks, which are typically discrete and transitory shocks. It raises ongoing risks of victimization, making it particularly relevant for studying medium-run integration decisions.

[6]Prior work interprets intermarriage both as a signal of long-term settlement and as a pathway to legalization when alternative options are limited (Adda et al., 2025).

2 Background

US Mexican Migrants Mexican migrants constitute the largest immigrant group in the US. They have one of the highest employment rates but persistently low naturalization rates compared to other groups, despite being primary green card recipients. Several factors contribute to this pattern, including limited English proficiency, proximity to Mexico, and application costs (Gonzalez-Barrera, 2017; Rosenbloom and Batalova, 2022).

Another factor contributing to low naturalization rates among Mexicans is their historically high rate of return migration. Between 2002 and 2005, an estimated 40% of Mexican migrants returned to Mexico (Ambrosini and Peri, 2012), though this declined to 30% by 2019 (Campos-Vazquez and Lara, 2012). Most Mexicans initially arrive as temporary economic migrants, weighing the decision to settle permanently against the option of returning home. As a result, naturalization decisions are often shaped by expectations about whether and when to return. However, the decision not to naturalize comes with important trade-offs, as citizenship expands labor market opportunities, increases homeownership, and strengthens political participation (Bratsberg et al., 2002; Gathmann and Garbers, 2023; Hainmueller et al., 2015, 2017).

Migrants typically become eligible for naturalization after holding a green card for five years (or three years if married to a US citizen). The most common pathway to permanent residency is family-based migration, particularly through marriage to a US citizen. This route bypasses quotas, lotteries, and employment-based visa requirements. It is available to both documented and undocumented migrants. Undocumented migrants may obtain permanent legal status through marriage if they initially entered the US legally but subsequently overstayed their visas, which is a condition most meet. Those who entered unlawfully must leave the US and apply for a waiver through US consulates in their home country, potentially facing a 3-10 year re-entry bar. Nonetheless, individuals are able to obtain a waiver while remaining in the US if they can demonstrate that their absence would cause "extreme and unusual hardship" to a US citizen (i.e. their spouse).

Mexico's War on Drugs For decades, Mexico has grappled with drug production and trafficking, as drug trafficking organizations (DTOs) have capitalized on weak institutions and proximity to the US, the largest market for cocaine (UNODC, 2007). During the 1980s and 1990s, DTOs were in their formative stages, gradually establishing their presence across Mexico (Lindo and Padilla-Romo, 2018). This early period was relatively stable, but the situation soon spiraled out of control, as some DTOs fragmented, split over leadership disputes, and began competing for territorial dominance. By 2006, the Mexican drug market was primarily dominated by five major DTOs and alliances: Gulf, Juárez, La Familia, Sinaloa/Beltrán-Leyva, and Tijuana.

While Mexican drug cartels engaged in the production of various illicit substances, drug-trafficking

and transportation, particularly of Colombian cocaine, generated the majority of their profits. By the 1990s, approximately 90 percent of the cocaine destined for the US was smuggled through the US-Mexico border (Bonner, 2010).

Before 2005, Mexico's primary approach to combat drug trafficking was centered around crop eradication programs, which proved largely ineffective. A policy shift occurred in 2006 when President Felipe Calderón of the National Action Party (PAN) took office and unexpectedly declared war on drug trade organizations. Calderón won the presidential election by a narrow margin and had not made security a major focus of his campaign (Castañeda and Aguilar, 2012). His strategy aimed to confront drug cartels through eradication of drug crops, confiscation of drugs, and destabilization of cartels by capturing, incarcerating, or eliminating their major leaders, an approach known as the kingpin strategy. He initiated joint military operations with states, starting in the state of Michoacán in December 2006. Throughout his six-year tenure as president, Calderón apprehended a total of 25 drug lords (Coscia and Gutiérrez-Romero, 2023) and extradited a peak of 587 criminal suspects to the US (Bonner, 2010).

Importantly, the start of the war on drugs saw a significant increase in the national homicide rate in Mexico. As shown in Figure 1, Mexico's homicide rate remained relatively stable and low until 2006.[7] However, starting in 2007, the average homicide rate increased from 11 per 100,000 to its first peak of 25 per 100,000 in 2012, an almost 150 percent increase. An important feature of this violence is its spatio-temporal variation, with not all municipios experiencing the same timing and intensity of violence escalation. Figure 2 illustrates this variation in the homicide rate across Mexican municipios over four different years. Prior to the war on drugs, in 2006, most municipios experienced low violence, but by 2012, it had spread to previously unaffected western and northeastern regions.

After 2012, Mexico's homicide rate briefly declined as the new administration shifted focus to dismantling cartel trafficking networks rather than directly confronting kingpins (Coscia and Gutiérrez-Romero, 2023). However, President Peña Nieto's crackdown on drug lords reignited territorial conflicts, causing violence to surge again in 2016.

Given the complexity and evolving nature of the war, this paper primarily focuses on examining the medium-run impacts of violence in Mexico. As such, the analysis is limited to data up to year 2012 (the shaded region of Figure 1). The initial period of violence during the Calderón administration was more sudden, exogenous, and understood than the later periods when DTOs spread and changed locations. Therefore, I can more accurately account for the sources of violence during the initial period in my identification strategy.

Several studies link the first stage of violence (2007-2012) to Calderón's military operations,

[7]There was a small uptick in homicides between 2005 and 2006 driven by disputes between different branches of cartels in the state of Michoacán. Nonetheless, the national homicide rate remained low.

which created power vacuums and fueled cartel conflicts (Dell, 2015; Lindo and Padilla-Romo, 2018).[8] Cartels responded with violence to intimidate the public and pressure the government while continuously financing their operations through kidnappings, extortion, and theft.

Consequently, violence extended beyond those working in drug trade, targeting officials, civilians, and journalists (Molzahn et al., 2012). Table A1 in the Appendix provides a breakdown of homicides in Mexico by the victims' demographic characteristics. Between 2006 and 2012, 10.32 percent of the victims were female. Over 2,800 victims were children under the age of 15.

3 Data

The analysis combines data from five main sources. In this section, I describe these data and explain how I measure migrants' exposure to violence in their source municipios. Supplementary data for controls and mechanisms are detailed in Appendix C.

3.1 Mexico's Violence and Drug Trade

Homicide Rate I use annual homicide rates as a proxy for violence in Mexican municipios. I obtain data on all homicides in Mexico from mortality records published by the National Institute of Statistics and Geography (INEGI). These records encompass the universe of death certificates issued between 2000 and 2012. Within each death entry, I observe demographic characteristics, such as age and sex, as well as the date of death, the municipio where it occurred, and its cause. I specifically identify cases where the recorded cause of death is a homicide.[9] To compute the homicide rate per 100,000 persons, HR_{mt}, I divide the number of homicides in a given municipio m and year t by the municipio's population in 2005 per 100,000 persons. I obtain the population data from the Mexican Census of Population and Housing (2005).

While alternative crimes like kidnappings and extortion also indicate violence, they suffer from underreporting. For example, fear of retaliation often deters individuals from reporting kidnappings or property crimes. Homicides, however, are harder to conceal, less prone to underreporting, and uniformly classified across municipios, making them a more reliable measure of violence. Im-

[8] Dell (2015) demonstrates that municipalities where Calderón's party (PAN) narrowly won the mayoral election experienced a notable rise in drug-related homicides, suggesting that PAN policies played a role in triggering the increase in violence. Lindo and Padilla-Romo (2018) focus on Calderón's kingpin strategy, leveraging variation in the geographic distribution of DTOs and the timing of high-level DTO captures. They find that these captures led to heightened homicide rates not only in the targeted municipios but also to a lesser extent in other municipios where the captured kingpin's DTO maintained a presence.

[9] The INEGI homicides data have been validated by NGOs and news outlets, which found an increase in violence consistent with official numbers. It also aligns with confidentially gathered data on drug-related homicides by the National Council of Public Security from December 2006 to October 2011 (Heinle et al., 2015).

portantly, Velásquez (2020) shows a strong correlation between changes in the homicide rate and fear of assault and perceptions of safety.

A potential concern is that events related to the war on drugs or attempts by officials to shape public perception could affect the classification of violent deaths as homicides, introducing measurement error. To assess this, Figure A1 in the Appendix compares annual trends in homicides, suicides, and accidents. While homicides rose sharply after 2007, suicides and accidents did not. If homicides were misreported as other violent deaths, and assuming constant reporting of mortality, suicides and accidents would have increased similarly, but this is not observed.

Drug Trade Organizations (DTOs) I use data from Coscia and Rios (2012), the first to map the geographic distribution of Mexico's nine largest DTOs using a web-scraping method that tracks their annual presence in municipios from 1990 to 2010 via newspapers. The authors validate their procedure by testing its accuracy in identifying governors' areas of operation and note that data before 2004 may be less reliable.

I define each drug trade organization's area of operation using the 2004-2006 data, which capture the geographic distribution of DTOs before the onset of the war on drugs. I focus on the five dominant cartels at that time (Sinoloa-Beltrán-Leyva, Tijuana, Gulf, Juárez, and La Familia), and generate a dummy variable that indicates whether the municipio had at least one of these in any of the three years. Only 15 percent of municipios had DTO presence in 2004-2006, covering approximately 59 percent of Mexico's population in 2005.

Cocaine Seizures in Colombia I obtain data on annual cocaine seized (KG) by Colombian forces from 2000 to 2012 from Colombia's Ministry of Justice and Law (2022). Additionally, I gather data on annual coca cultivation area (in Hectares) from the International Narcotics Control Strategy Reports of the US Department of State (United States Department of State Bureau of International Narcotics and Law Enforcement Affairs, 2016). Then, I construct a normalized measure of Colombian cocaine seizures as annual seizures per hectare of coca cultivated land.

3.2 Outcomes and Sample

To observe migrants' outcomes, I use individual-level data from the 2006-2012 American Community Surveys (ACS), obtained through IPUMS (Ruggles et al., 2023). The ACS is a large nationally representative repeated cross-section that does not selectively sample individuals based on legal status. The smallest geographic identifier in the data is the Public Use Microdata Area (PUMA), which I map to commuting zones (CZ) (Autor and Dorn, 2013; Autor et al., 2019).[10]

[10]I conduct the analysis at the CZ level because the MCAS data —introduced in the next section —are available at the county level. CZs are consistent aggregations of counties, allowing clean mapping of the Matrícula data. Mapping

The ACS provides a rich set of indicators of integration. I focus on naturalization —the process by which a foreign citizen obtains US citizenship. I also examine marriage incidence and marriage to US citizens, which can signal the desire for permanent residency. Marriage to a US citizen is defined as a marital link to any US citizen, whether US-born or naturalized foreign-born. For cultural integration, I look at intermarriage patterns —marriage to Mexican-born, other foreign-born, or US-born natives —which can promote language acquisition and social network expansion (Chi and Drewianka, 2014; Meng and Gregory, 2005; Meng and Meurs, 2009). Finally, I examine labor market outcomes and human capital accumulation. Details on variable construction are provided in Data Appendix C.

I restrict the sample to non-institutionalized Mexican-born individuals aged 18-65 who migrated to the US between 2000 and 2006, before the war on drugs. This restriction ensures that individuals were neither directly exposed nor selected into migration in response to violence.[11] Additionally, migrants are less likely to return the longer they stay in the destination country, with the highest return rates within ten years of migration (Nekoei, 2013). Therefore, focusing on a cohort that had been in the US for up to 13 years by 2012 captures those most likely to be considering return.

I further restrict the sample to commuting zones with a Mexican population above the 50th percentile in the pre-period (averaging 2000, 2005, and 2006) and at least one Mexican-born individual observed in every year from 2006 to 2012 (balanced sample). Moreover, each commuting zone must have issued at least one Matrícula card in 2006 —73 commuting zones do not meet this criterion. These criteria ensure that the analysis focuses on comparable areas with established Mexican networks before the war on drugs. In Section 6, I relax these restrictions and demonstrate the robustness of the results to different population cutoffs.

Table 1 presents summary statistics for three migrant groups: all working-age non-institutionalized Mexicans (Column 1), those who migrated between 2000 and 2006 (Column 2), and the analysis sample with CZ restrictions (Column 3). The analysis sample is broadly similar to the full Mexican population in the US. However, individuals in the analysis sample report lower English proficiency (68.8% vs. 48.8%) and have spent less time in the US (6.5 vs. 19 years). Naturalization rates are low overall (25%) and even lower for the 2000-2006 cohort (5.2%). Across the three Columns, around 45% of migrants originate from municipios with a drug trade organization in 2004-2006. Column 4 confirms no statistically significant differences between samples of Columns 2 and 3.

county-level MCAS data to PUMAs would introduce noise, as PUMAs can be part of or an aggregation of counties. As it is also possible to map PUMAs to CZs in the ACS, I opt for this approach.

[11] Self-selection into migration could bias estimates if violence drives both migration and integration outcomes. By focusing on pre-war arrivals, I ensure that the sample is not selected based on violence. A separate concern is that post-war arrivals might alter the composition of migrants in each commuting zone. I show in Section B.6 that migration from Mexico does not significantly respond to violence and that new migrants' characteristics remain unchanged, suggesting no changes in cohorts' "quality" over time.

3.3 Migrant Networks and Exposure to Violence While in the US

The main aim of this paper is to estimate the effect of violence in migrants' source regions on their integration. As mentioned in Section 3.2, I focus on Mexican migrants who arrived in the US before the war on drugs, meaning their exposure to violence is indirect. Ideally, one would assign each migrant the homicide rate of their municipio of origin, but such information is not available in US administrative or survey data.

Alternatively, to identify the source regions of Mexican migrants at the municipal level, I use administrative data from the Matrícula Consular de Alta Seguridad (MCAS) identity cards program, available since 2006. The program allows Mexican immigrants in the US, regardless of their immigration status, to obtain a consular ID card from their local consulate by providing a birth certificate or passport and proof of residency (Albert and Monras, 2022). The card remains valid for five years, renewable upon expiration, and facilitates access to banking, housing, remittances, and, in some states, driver's licenses (Daniele et al., 2023). Notably, it holds particular appeal for undocumented immigrants who often lack other forms of identification (Caballero et al., 2018).

The Consular card records each holder's Mexican municipio of birth and US county of residence. I use aggregate tabulations of MCAS cards issued annually between 2006 and 2012. Additionally, I am able to differentiate between first issuances and renewals, which is important to precisely measure contemporaneous migrant networks. Most cards are first issuances, with renewals averaging about 17 percent of the total per year.

I map the MCAS data to the Mexican municipio - US commuting zone level and compute migrant network weights as the share of migrants from each source municipio m located in US commuting zone (CZ) j during year t:

$$NTWK_{jmt} = \frac{s_{jmt}}{S_{jt}} \tag{1}$$

where s_{jmt} is the number of new Matrícula cards issued for migrants from municipio m residing in CZ j in year t. $S_{jt} = \sum_m s_{jmt}$ is the total number of new cards issued in that commuting zone. The weights are measured contemporaneously to capture the most current distribution of migrants' sources, which is most likely to be influenced by prevailing violence. This approach follows previous work using MCAS data (Caballero, 2022; Pearson, 2023; Tiburcio and Camarena, 2023). Importantly, the results are not sensitive to alternative constructions of the network weights (see Section 6.2).

The Matrícula data uniquely capture migration patterns between small subnational areas. Previously, such patterns could only be observed at the subnational level in either the origin or the destination, but not both simultaneously. Because participation in the program is voluntary, coverage is especially high among undocumented migrants, for whom the card provides access to

services otherwise unavailable. However, in Appendix B.1, I show that the MCAS data accurately map migrant networks and reliably capture the overall distribution of Mexican migrants in the US, regardless of their immigration status (Figure B1, Figure B2, Figure B3). Given the persistence of migrant networks, specific origin municipios have long-established ties to particular US destinations, so the origins of card holders mirror the broader migrant population.

Using the network weights, I construct the *Homicide Shock*, a continuous measure of exposure for Mexicans in each US commuting zone to violence in Mexico. It is a weighted average of homicide rates in migrants' source municipios, which can be interpreted as the homicide rate in an "average" source municipio. For each commuting zone j in year t:

$$HS_{jt} = \sum_{m} NTWK_{jmt} \times HR_{mt} \tag{2}$$

where NTWK$_{jmt}$ represents the network weights (Equation 1) and HR$_{mt}$ is the annual homicide rate per 100,000 persons in municipio m in year t. Figure A2 illustrates the spatial and temporal variation of the homicide shock across US commuting zones between 2006 and 2012, mirroring trends in Mexico's homicide rate.

Given the nature of the MCAS data, the homicide shock relies on migrants' municipios of birth. A natural question is whether these are the locations most relevant to migrants' decisions. There are strong reasons to expect so. Migrants typically maintain close ties to their origin communities through family members who remain, property, and regular communication. Moreover, evidence suggests that migrants who return overwhelmingly settle in or near their places of origin. Data from the Mexican Census indicate that approximately 80 percent of return migrants settle in their state of birth.[12] A small-scale survey of return migrants in Jalisco —Mexico's largest return-migration state —reports that almost 92 percent returned to their birthplace or pre-migration residence (Hazán, 2014). These patterns validate the use of birthplace-based network weights in constructing the exposure measure.

4 Empirical Framework

After constructing the homicide shock, I assign it to each migrant in the ACS based on their commuting zone and calendar year. Then, I estimate the following model:

$$Y_{ijt} = \alpha + \beta HS_{jt} + \alpha_j + \lambda_t + \Lambda_{ysm} + \gamma_1 X_{ijt} + \Gamma_2 Z_{jt} + \epsilon_{ijt} \tag{3}$$

Y$_{ijt}$ represents the outcomes of interest for individual i in commuting zone j at year $t \in$ [2006,

[12]Because municipio-of-birth information is not available in the public Mexican Census, the calculation cannot be replicated at the municipio level.

2012]. X_{ijt} includes individual-level controls: age, sex, and education. Z_{jt} is a vector of commuting zone-level controls, including immigration enforcement measures (Secure Communities, E-verify, and 287(g) agreements) and Bartik-style measures of labor demand to account for changing economic conditions after the 2008 recession.[13]

The specification includes commuting zone fixed effects (α_j) to absorb time-invariant differences across destinations, year fixed effects (λ_t) to control for national shocks common to all commuting zones, and years-since-migration fixed effects (Λ_{ysm}) to account for differential assimilation trajectories by time spent in the US. Standard errors are clustered at the commuting zone level to account for potential error correlations among individuals within the same commuting zone (Cameron and Miller, 2015).

The homicide shock is normalized to mean zero and standard deviation one. The coefficient of interest, β, captures the effect of a one standard deviation increase in the homicide shock. Variation in the homicide shock across commuting zones arises from the fact that different Mexican municipios experienced violence at different times due to the nature of the war on drugs. If the variation in the homicide shock were randomly distributed across commuting zones and years, OLS would estimate the causal impact. However, this is unlikely for several reasons.

First, the location of violence within Mexico is not random and may be correlated with municipio-specific factors. Migrants and non-migrants (stayers) from a given municipio may share unobserved characteristics —socioeconomic background, education, cultural traits —that are correlated with both violence exposure and integration outcomes.[14] Second, the two components of the homicide shock (network weights and homicide rates) may affect each other. Violence could alter migration patterns, while migration outflows could reduce local violence. Third, reverse causality is possible if more assimilated migrants send larger remittances, potentially attracting cartel activity in origin municipios. The direction of these biases is ambiguous.

To address these concerns, I adopt an instrumental variable approach that fixes the network at its 2006 level and exploits plausibly exogenous variation in violence.

[13] These measures are constructed following Watson (2013) and East et al. (2023), calculated separately for US-born, foreign-born, low-educated, and high-educated. Specifically, for each demographic group g, industry d, commuting zone j, and year t, the following equation is computed: Bartik$_{jt}$ = $\sum_d \frac{Emp_{gdj,2005}}{Emp_{gj,2005}} \times NationalEmp_{dt}$, where Emp represents total working-age employment.

[14] For example, if migrants from lower socioeconomic backgrounds exert more effort to assimilate and are also more likely to originate from violent areas, the estimated effect would be biased upwards. Conversely, violent areas may have stronger collective culture and family ties. In such cultures, individuals are less mobile and experience weaker labor market outcomes, which can hinder assimilation even after migration (Alesina et al., 2015). In this case, the bias would be downwards.

4.1 Instrumental Variable Approach

The instrument combines three components: (1) pre-war distribution of migrants' source municipios across US commuting zones, (2) pre-war DTO presence in Mexican municipios, and (3) annual cocaine seizures in Colombia. The first component transmits the violence shock from Mexico to the US through migrant networks. The second and third interact to generate plausibly exogenous variation in violence within Mexico —DTO locations determine where violence escalates, while cocaine seizures determine when.

Migrant networks The homicide shock includes network weights that capture the distribution of migrants' source municipios across US commuting zones. As discussed in Section 3.3, these weights are measured contemporaneously, which may introduce simultaneity bias if current networks are influenced by the ongoing war. To address this, I fix the networks at their 2006 pre-war values in the instrument. This approach relies on migrant networks being highly persistent —distinct source municipios have long-established ties to specific US destinations, as historical migration patterns lower migration costs and reinforce destination choices over time (Carrington et al., 1996; Jaeger, 2000; Munshi, 2003).

DTO presence To capture variation in violence within Mexico, I exploit the pre-war locations of DTOs between 2004 and 2006. A municipio is classified as having DTO presence if at least one cartel operated there during this period; Figure 3 maps these locations.[15] DTO municipios were not systematically disadvantaged before the war. They had higher employment and lower emigration rates on average (Appendix Table A2). This mitigates concerns that DTO presence reflects weaker regions or a higher baseline propensity to migrate.

Importantly, municipios with DTOs experienced a disproportionate increase in violence after 2006. Figure 4 plots average homicide rates from 2000 to 2012 separately for municipios with (blue line) and without DTO presence (red line). Both groups exhibited stable and parallel trends before 2007, though DTO municipios had slightly higher levels, likely due to ongoing illicit activities. Starting in 2007, homicide rates diverged sharply, with a significant increase in DTO areas. As previously mentioned, this pattern reflects Calderón's kingpin strategy, which created power vacuums and intensified cartel conflicts. DTOs used violence to intimidate authorities and the public. Areas with DTO presence exhibit greater fear of victimization, even among citizens not directly targeted (Gutierrez-Romero, 2016).

[15]The origins of DTO locations are strongly linked to early 20th-century Chinese migration to Mexico. Following US restrictions on Chinese immigration, many Chinese migrants settled in Mexico, some establishing early opium production and drug trade routes to the US. Murphy and Rossi (2020) show that Chinese settlement in the 1930s predicts modern cartel locations.

Cocaine supply shocks The final component of the instrument exploits temporal variation in Colombian cocaine seizures. Mexico is not a cocaine-producing country. Mexican cartels purchase most of their cocaine from Colombia and smuggle it across the border to the US. A substantial share of cartel profits during the 2000s came from cocaine trafficking rather than drug production (Kilmer et al., 2010), and Colombia produces approximately 73 percent of cocaine destined for the US market (National Drug Control Agency, 2015).

Colombia has repeatedly attempted to combat drug production, with enforcement intensity varying over time. Figure 5 shows annual cocaine seizures per hectare of coca cultivation. After declining in the mid-2000s, seizures increased sharply from 0.78 kg per hectare in 2007 to 1.71 kg per hectare in 2012, as the government shifted from crop eradication to targeting manufacturing and transportation. This escalation reduced the supply available to Mexican cartels, driving up prices and intensifying conflict over scarce rents (Castillo et al., 2020).[16] Violence increased particularly in areas where DTOs operated.

This supply shock is plausibly exogenous to conditions in Mexico. Colombian enforcement was driven by domestic political cycles and funding availability, not by conditions in Mexican municipios, US commuting zones, or coordinated international enforcement (Castillo et al., 2020). In Appendix B.2, I show that the interaction of DTO presence and cocaine seizures strongly predicts homicide rates across Mexican municipios and provide additional evidence supporting the exogeneity of this cocaine supply shock.

4.2 Instrument and Validity Diagnostics

I construct the instrument for each commuting zone j and year t as follows:

$$IV_{jt} = \sum_{m} NTWK_{jm,2006} \times DTO_{m,2004-2006} \times Col_t^{Cocaine} \tag{4}$$

where $\text{NTWK}_{jm,2006}$ is the 2006 share of MCAS cards in CZ j from source municipio m. $\text{DTO}_{m,2004-2006}$ indicates whether the municipio had a DTO before the war, and $Col_t^{Cocaine}$ measures annual Colombian cocaine seizures per hectare of coca cultivated land.

The instrument combines cross-sectional variation in exposure (pre-war share of migrants from DTO municipios) with temporal variation in cocaine seizures. The instrument follows a shift-share-like structure, but with a single common shock rather than unit-specific shocks.[17] This re-

[16] Mexican cartels did not replace that supply with drugs from other sources. When Colombian cocaine seizures increased, cocaine seizures in Mexico decreased, implying that the reduction in supply was not offset by alternative sources (Castillo et al., 2020).

[17] Unlike a standard shift-share IV where identification can rely on exogenous shocks, here the cocaine shock, which is plausibly exogenous, is common to all municipios. Identification therefore relies on the exogeneity of the shares (Goldsmith-Pinkham et al., 2020).

sembles an intensity difference-in-differences design, where treatment intensity varies across CZs based on their pre-war share of migrants from DTO municipios. The pre-2007 period exhibited low and stable violence, followed by differential exposure for migrants from DTO municipios. The key identifying assumption is that pre-war shares of migrants from DTO municipios in CZs are uncorrelated with the error term. If migrants in high-exposure CZs were already on differential integration trajectories before the war, estimated effects could reflect these pre-existing trends rather than the causal impact of violence.

To assess whether migrants in high- and low-exposure areas differed systematically before the war, I compare their baseline characteristics (Table A3) and outcomes (Table A4) in 2006. High- (low-) exposure CZs are defined as those with above- (below-) median shares of migrants from DTO municipios. Columns (1) and (2) present summary statistics for high- and low-exposure CZs, and Column (3) reports the statistical difference. This analysis identifies any pre-war level differences between migrants in these areas.

As shown in Table A3, migrants in both groups are broadly similar in years since migration. Those in high-exposure areas are slightly older ($p < 0.05$) and more likely to be female ($p < 0.01$). Educational attainment is similar on average, with no significant difference in years of schooling, though there are small differences within categories. I control for individual characteristics (age, sex, education) throughout the analysis. Turning to outcomes (Table A4), naturalization rates are equally low in both groups (around 4 percent). Marriage is more common in high-exposure areas, particularly marriages to other Mexicans. Employment and hours worked are lower in high-exposure areas, likely reflecting the higher share of females. Overall, the balance tests do not indicate a consistent pre-war integration pattern across areas.

The balance tests address level differences, but as mentioned, the key threat to identification is differential pre-trends. To assess this, I examine whether post-period instrument exposure predicts pre-period outcome changes. Specifically, I estimate:

$$\Delta Y_{j,2000-2006} = \beta \sum_{m} NTWK_{jm,2006} \times DTO_{m,2004-2006} \times \frac{Col_{2012}^{cocaine}}{Col_{2007}} + \gamma Z_{j,2000-2006} + \epsilon_j \quad (5)$$

where Δ $Y_{j,2000-2006}$ is the change in the mean outcome for CZ j between 2000 and 2006. Controls include changes in Bartik labor demand and immigration enforcement over the same period, as well as average demographic characteristics.[18]

Figure 6 presents the estimates and 95% confidence intervals. Coefficients are statistically insignificant and precisely estimated around zero. The estimates for labor force participation and

[18]The regression is weighted by the 2006 Mexican population in each CZ. Results are not sensitive to alternative weighting schemes.

employment are slightly larger but remain statistically insignificant. This provides reassurance that the IV is not correlated with outcome pre-trends.

As an additional check, I isolate the cross-sectional component —the share of migrants from DTO municipios in each CZ —and examine whether it predicts pre-period outcome changes separately for two arrival cohorts: migrants arriving in 1993-1999 and those arriving in 2000-2006 (Figure A3). For both cohorts, DTO exposure does not systematically predict changes in integration outcomes between 2000 and 2006, and an F-test shows no significant differences across cohorts.

Furthermore, I estimate an event-study specification using the cross-sectional exposure measure interacted with year indicators (Section 6.2, Figure A4). This approach directly tests for differential pre-trends.[19] The results show flat and statistically insignificant coefficients before 2007, with effects emerging only after the onset of the war on drugs. Taken together, these results strongly support the identifying assumption.

Separately, I examine whether high- and low-exposure CZs experienced differential labor demand shocks during the study period. If areas with more migrants from DTO municipios were disproportionately affected by the Great Recession, estimated effects could reflect economic conditions rather than violence exposure. In Appendix Table A5, I compare changes in Bartik labor demand measures between 2006 and 2012 across high- and low-exposure CZs. The results show no statistically significant differences, indicating that exposure to the Great Recession is not correlated with migrant shares from DTO municipios.[20]

A final concern is that Colombian cocaine seizures could have a trickle-down US drug markets, generating drug-related violence that correlates with CZ exposure. This would violate the exclusion restriction. To address this, I test whether the homicide shock impacts drug sale or possession arrests using Uniform Crime Reporting data (Kaplan, 2021). I find no significant effects, suggesting that the instrument does not operate through US drug market violence (Appendix B.3, Table B2).

First Stage Results Table 2 reports first-stage estimates of the instrument's effect on the homicide shock. The instrument is a strong predictor of the homicide shock across all specifications, with coefficients significant at the 1 percent level. In the preferred specification (Column 6), a one standard deviation increase in the instrument corresponds to a 1.02 standard deviation increase in the homicide shock. The Kleibergen-Paap F-statistic is 12.46, exceeding the conventional threshold (Staiger and Stock, 1997; Stock and Yogo, 2005). Using the Montiel Olea and Pflueger (2013)

[19] ACS data for 2001-2004 lack PUMA identifiers, making it impossible to assign individuals to CZs. This leaves only three pre-treatment years (2000, 2005, 2006), which limits precision.

[20] Additionally, results are not sensitive to excluding Bartik controls from the main specification and are available upon request.

IV test, the effective F-statistic is 20.3, above the critical value of 15 for 20% worst-case bias but slightly below 23.1 for 10% worst-case bias. To ensure robustness, I also report Anderson-Rubin confidence intervals and LIML estimates (Andrews et al., 2019; Lee et al., 2022; Cameron and Trivedi, 2005).

5 Results

Both the instrument and the homicide shock are normalized, so coefficients represent the percentage point change in outcomes per standard deviation increase in the homicide shock (which corresponds to almost 12 homicides per 100,000).[21]

5.1 Naturalization and Intermarriage

Table 3 presents OLS (left panel) and 2SLS (right panel) estimates of the effects of violence on naturalization, marriage, and marriage to US citizens. The latter includes marriages to both US-born natives and naturalized foreign-born individuals. The OLS estimates in Columns (1-3) indicate positive and significant associations between the homicide shock and all three outcomes. A standard deviation increase in violence exposure is associated with increases of 0.3 percentage point (p.p.) in naturalization, 1 p.p. in marriage, and 0.6 p.p. in marriage to US citizens.[22] The 2SLS estimates in Columns (4-6) show larger effects, suggesting downward bias in OLS.

Specifically, a standard deviation increase in the homicide shock raises naturalization by 1.7 p.p., a 43 percent increase relative to the 2006 baseline mean of 3.9 percent ($p < 0.05$). This translates to a 3.6 percent increase in naturalization per unit increase in the "average" municipio's homicide rate. Violence exposure also increases marriage by 2.8 p.p. and marriage to US citizens by 2.5 p.p., a 29 percent increase relative to baseline ($p < 0.01$).[23]

To examine whether violence impacts cultural integration through intermarriage, I disaggregate marriages to citizens by spouse origin: US-born natives, naturalized non-Mexican foreign-born,

[21] The average homicide shock is 22, nearly double its standard deviation. Over the sample period, the homicide shock increased from 10 to 30 homicides per 100,000 between 2006 and 2012, or roughly by 1.66 standard deviations. For comparison, the US homicide rate in 2014 was 7.8 per 100,000; in Louisiana, the most violent state, it was 11.7 per 100,000 (CDC/National Center for Health Statistics, 2022).

[22] Observing spouse characteristics requires the spouse to be present in the household. If a spouse is absent, marriage to a US citizen cannot be observed, resulting in fewer observations in Columns (3) and (6). Appendix Table A6 examines marriages by spouse presence, suggesting increases in both types.

[23] Marriage to US citizens is a stock measure. The increase could reflect new marriages, naturalization within existing marriages, or fewer divorces. Appendix B.4 explores these channels. The results suggest that the increase primarily stems from new marriages to US citizens, with a smaller contribution from naturalization within existing marriages. Changes in marriage stability do not appear to be a factor. These estimates are imprecise due to data limitations —years of marriage and naturalization are only available starting from 2008, reducing the sample by 32%.

and naturalized Mexicans.[24] Table 4 shows that violence increases marriages to both US-born natives and naturalized Mexicans. I estimate a 1.1 p.p. increase in marriage to US-born natives relative to a baseline of 4.6 percent ($p < 0.1$). On the other hand, marriage to naturalized Mexicans increases by 1.5 p.p., a 42 percent increase relative to a baseline mean of 3.5 percent ($p < 0.01$). The fact that both effects are positive suggests that spouse citizenship matters, in addition to nationality.[25]

While the naturalization effect appears large, it reflects the very low baseline naturalization rate among this cohort. To benchmark this magnitude, I compare it to other naturalization interventions. Hainmueller et al. (2018) find that a $680 fee voucher increased naturalization applications by 41 percent. Yasenov et al. (2019) show that a 2010 USCIS fee waiver reform raised naturalization by 1.5 p.p. among low-income immigrants —an effect similar in size to my estimate. Amuedo-Dorantes and Lopez (2021) estimate that one additional interior enforcement initiative raised naturalization by 13 percent among Mexican legal permanent residents; my estimate implies an effect equivalent to three such initiatives annually.

Overall, heightened violence in migrants' source regions increases civil integration through naturalization and marriage to US citizens. However, intermarriage rates with US-born natives remain stable —effects are larger for marriage to naturalized Mexicans than to natives. This pattern suggests marriage serves as a pathway to legal permanence rather than purely reflecting cultural assimilation, though it may still strengthen social networks and language acquisition.

5.2 Human Capital and Labor Market Responses

The previous section shows that violence in source municipios prompts Mexicans to pursue naturalization and marriage to US citizens, both investments in permanent settlement. A natural question is whether migrants also adjust their labor market behavior or human capital accumulation. Prior work suggests that migrants who plan to stay longer invest more in destination-specific skills (Adda et al., 2022; Cortes, 2004), and naturalization may expand access to formal employment (Bratsberg et al., 2002). This section investigates whether Mexican migrants have altered their behavior along these margins.

[24] I also examine marriage by spouse nationality regardless of citizenship status (Appendix Table A7). The results show a decrease in marriages to non-Mexican foreign-born individuals and an increase in marriages to Mexicans, though estimates are noisy. The effect on marriages to non-naturalized Mexicans is negative but small (0.27 p.p.) and statistically insignificant.

[25] An interesting question is if there is also a parallel increase in cohabitation, which reflects a desire to establish roots in the US, even though it lacks the legal implications associated with permanent residency. I explore the effect of the homicide shock on overall cohabitation and find a decrease, potentially indicating a shift from cohabitation to marriage. See Appendix B.5.

Labor Market Effects The upper panel of Table 5 presents 2SLS estimates of violence on labor supply and wages. I find positive but small and insignificant effects on labor force participation, employment, or hours worked. The 95 percent confidence intervals are tight enough to rule out economically meaningful effects. For example, the estimated coefficient on employment ranges from -/+ 0.02, implying at most a 2.8 percent change relative to a 69 percent baseline. Hourly wages show a marginally significant increase of \$0.90 ($p < 0.1$), but this effect is small. These effects are consistent across age groups, years since migration, and sex.

In contrast to my results, Bassetto and Monteiro (2024) find that immigrants in Germany increase job search effort and find employment faster following terror events in their home countries. However, migrants in their sample have much lower baseline employment (36 percent), leaving substantial room for labor supply adjustment. Migrants in my sample have high baseline employment (70 percent), limiting the scope for adjustment along this margin. Additionally, Bassetto and Monteiro (2024) study very short-run responses (within 3 months) to discrete terrorist events, while I examine medium-run responses to sustained violence. For already-employed migrants facing ongoing violence, the margin of response appears to be legal permanence —naturalization and marriage —rather than labor market behavior.

Adult Human Capital The lower panel of Table 5 shows no significant effects of violence on years of schooling, school attendance, or self-reported English proficiency. Notably, point estimates on reporting poor English proficiency are negative, suggesting potential improvement, but the effect is statistically insignificant. The 95 percent confidence intervals are also narrow, ranging from -0.0331 to 0.0158, with the lower bound implying at most a 4.2 percent decrease relative to baseline. Spanish use at home shows no significant change. The left edge of the confidence interval suggests a 0.89 p.p. reduction, quite small relative to the 97 percent baseline. These null effects persist across subgroups.[26]

Overall, these results indicate that violence had no measurable impact on human capital accumulation among adult Mexican migrants. Beyond the mechanisms explored in Section 7, a key reason may be that the analysis focuses on adults with an average age of 31.5 and, as noted above, already high employment rates. For such adults, pursuing formal education is uncommon and acquiring a new language is more challenging, leaving little scope for adjustment. If migrants respond to violence by investing in human capital, the relevant margin may be their children rather than themselves.

Children's Education To examine this possibility, I analyze educational outcomes for children aged 6-18 whose parents are in the analysis sample. These children were either born in the US or

[26]Results on heterogeneous effects for employment and education outcomes are available upon request.

arrived from Mexico between 2000 and 2006 with their parents.[27]

Table 6 presents the 2SLS estimates of violence on children's educational outcomes. Violence exposure leads to improvements in educational attainment and English proficiency. A standard deviation increase in the homicide shock increases years of schooling by 0.2 and reduces poor English proficiency among Mexican-born children. Spanish dominance at home also declines, suggesting greater linguistic integration ($p < 0.05$). Importantly, US-born children, who already have citizenship, do not experience similar gains in education. These findings remain robust when controlling for age fixed effects.

The results suggest that while adult migrants do not pursue further education, they invest in their children's human capital, particularly for those born in Mexico who lack direct access to permanent residency. This pattern is consistent with Aksoy et al. (2024), who find that violence in Syrian refugees' hometowns improves their educational outcomes in Türkiye, with no effects on naturalized students. The similar pattern suggests that the response to home-country violence generalizes beyond displaced populations to economic migrants.

6 Selection and Robustness

6.1 Selection

A key threat to identification in repeated cross-sectional data is selective attrition. If violence causes certain migrants to exit the sample through selective return migration or other channels, observed changes in outcomes could reflect compositional changes rather than behavioral responses.

I assess this concern in two ways. First, I track cohort size over time. Table A8 shows that both the number of surveyed units and their weighted population remain stable across survey years, suggesting no significant attrition. If there is selective attrition, return migration, or even aging out of the sample, the cohort would shrink in size. Second, I test whether violence predicts changes in observable characteristics of migrants in the sample by estimating equation 3 with demographic variables as outcomes (Table A9). Violence exposure does not significantly affect age, educational composition, or years spent in the US. The one exception is sex; a standard deviation increase in the homicide shock makes respondents 3.5 p.p. more likely to be male. However, Figure A6 shows no meaningful heterogeneity in effects by sex, suggesting this does not drive the main results.

Overall, the evidence does not support selection or change in respondents' characteristics as alternative explanations for the main findings.

[27] Children can only be identified in the ACS if living with their parents in the same household. In my sample, 46 percent were born in Mexico, average age is 11, and 52% are male. It should also be noted that there is no evidence that violence affects fertility among adults in my sample. These results are available upon request.

6.2 Robustness Checks

Event Study and Long Difference To assess dynamics and verify the absence of differential pre-trends between migrants originating from DTO and non-DTO municipios, I estimate an event-study specification. The main 2SLS estimates capture average effects over the 2006-2012 period but do not reveal whether effects emerge only after violence escalates or whether high-exposure areas were already trending differently before the war. The event study addresses this by tracing out year-by-year effects.

Treatment intensity is defined as the commuting zone's baseline share of migrants from DTO municipios, interacted with year indicators. This exploits the cross-sectional component of the IV —the share of migrants from DTO areas —rather than the full instrument. The identifying assumption is that, absent the war, migrants in higher-exposure commuting zones would have followed parallel trends relative to those in lower-exposure areas.

Figure A4 shows flat and statistically insignificant coefficients prior to 2006, consistent with parallel pre-trends. This indicates that migrants from DTO municipios were not on different trajectories before the escalation of violence. After 2006, outcomes diverge. Naturalization rises steadily in more exposed commuting zones, reaching gains of about 1-2 p.p. by 2012. Marriage to US citizens also increases after 2008, while marriage to Mexicans remains flat. There is also evidence of increased marriage to naturalized Mexicans, though some of the estimates are imprecise. Overall, the event-study dynamics align with the 2SLS results.

Because several outcomes are absorbing states (e.g., naturalization), I also estimate a long-difference specification with outcomes measured as $\Delta Y_{2012-2006}$. I compute each commuting zone's cumulative homicide shock between 2006 and 2012 and instrument it with the interaction of DTO migrant shares and the change in cocaine seizures. Table A10 mirrors the main estimates. A one standard deviation increase in cumulative violence raises naturalization by 2.8 p.p. ($p < 0.05$), an effect equivalent to nearly 80 percent of the average increase in naturalization over this period. Violence also increases marriages to US citizens and naturalized Mexicans. Results are less precise, likely due to reliance on only two cross-sections.

Alternative Estimators As discussed in Section 4.2, there are potential concerns of weak instrument identification when using the conventional F-statistic threshold. To address this, I construct Anderson-Rubin confidence intervals, which are robust to weak identification (Anderson and Rubin, 1949). Table A11 reports these alongside standard 2SLS intervals and Limited Information Maximum Likelihood (LIML) estimates. The Anderson-Rubin intervals show only marginal widening and remain close to the 2SLS bounds. LIML point estimates closely track the 2SLS results.

Spillovers and Regional Shocks Some high-exposure commuting zones are located along the US-Mexico border, where migrants may be directly affected by drug trafficking or more likely to engage in circular migration. In Panel A of Table A12, I exclude the eleven border commuting zones. Results show larger and more precise estimates. Additionally, different US regions may experience distinct economic or policy shocks that year fixed effects do not fully capture. Panel B adds year-by-macro region fixed effects to account for differential time trends. Results remain similar, though slightly less precise due to reduced variation.

Network Definitions I examine robustness to alternative constructions of the migrant network weights in both the homicide shock and the IV. First, to address concerns about the potential endogeneity of contemporaneous networks in the homicide shock, Panel C of Table A12 uses pre-war (2006) network weights. Second, because relying on a single year of MCAS data may introduce measurement error, Panel D aggregates 2006 and 2007 records to define IV network weights. Third, Panel E includes both initial and renewal MCAS issuances to better capture the stock of valid cards. Fourth, Panel F excludes Arizona, which banned the Matrícula Consular in 2011 and implemented stricter immigration policies that may have affected migrants' behavior and introduced measurement error in network weights. Results are robust to alternative network definitions across all these specifications.

Sensitivity to Influential Origins My instrument interacts a single common shock (Colombian cocaine seizures) with cross-sectional variation in commuting zones' baseline exposure to DTO municipios. Identification here relies on the exogeneity of the exposure shares (Goldsmith-Pinkham et al., 2020). A natural concern is that identifying variation may be concentrated among a small number of origin municipios. I conduct leave-one-out exercises at both the state and municipio levels to assess this directly.

First, I re-estimate the main specification sequentially excluding each Mexican state. Figure A5 presents the results. Point estimates remain stable across all 32 exclusions, with confidence intervals consistently overlapping the baseline. No single state drives the findings. Second, I identify the DTO municipios that contribute most to identifying variation —those that are both sites of cartel activity and major migrant-sending regions. I rank DTO municipios by their total network weight across US commuting zones and exclude those at the top of the distribution. Table A13 reports results excluding the top 5, top 10, and top decile of influential municipios. Point estimates are virtually unchanged from the baseline and statistical significance is preserved, confirming that the findings are not driven by a small cluster of influential origins.

Falsification Tests Another potential concern is that the estimated effects reflect unobserved conditions or shocks to commuting zones that correlate with migrants' integration outcomes, rather than the violence itself. To address this concern, I conduct a falsification test using Central American migrants. Central Americans share key characteristics with Mexican migrants. They are predominantly Spanish-speaking, have similar educational profiles, work in overlapping industries, and reside in many of the same commuting zones. Crucially, however, they are not connected to violence in Mexican municipios through the network channel that underlies my identification strategy. If the main results were driven by CZ-level confounds rather than exposure to Mexican violence, Central American migrants in high-exposure commuting zones should exhibit similar changes in integration outcomes.

I estimate Equation 3 for Central American migrants who arrived between 2000 and 2006, assigning them the same Mexican homicide shock as co-resident Mexican migrants based on their commuting zone and year. Table A14 reports the results. Across all outcomes, I find no significant effects. The point estimates are small and statistically indistinguishable from zero. The one exception is marriage to Mexicans, which shows a marginally significant positive coefficient —consistent with spillovers in local marriage markets as Mexican migrants shift their partnership behavior, rather than a direct response to violence.

Overall, Central American migrants in the same locations, facing the same local economic conditions and policy environment, do not exhibit changes in integration behavior. This suggests that the effects are not driven by broader labor market or institutional conditions in high-exposure commuting zones, but are instead specific to migrants with ties to violence-affected regions of Mexico.

Sample Sensitivity Finally, my main analysis restricts the sample to commuting zones with a pre-period Mexican population above the 50th percentile and at least one Mexican observed in every year from 2006 to 2012. Table A15 shows robustness to varying these restrictions. Panel A imposes no CZ restrictions, essentially using the sample from Column 2 of Table 1. Panels B, C, and D apply 25th, 50th, and 75th percentile population cutoffs without requiring balanced CZ panels. Panels E and F apply the 25th and 75th percentile cutoffs with the balanced-panel condition. All samples are still restricted to Mexican-born, working-age, non-institutionalized individuals who migrated between 2000 and 2006.[28] Results are consistent across all specifications.

[28] I also examine a sample that includes all migrants from 2000 onward, without restricting to the 2000-2006 window. Results are robust and slightly larger in magnitude but may reflect selection. These results are available upon request.

7 Mechanisms

This section examines the mechanisms through which violence in migrants' home regions affects their integration in the US. Because my sample includes only individuals who arrived before the war began in 2006, the observed responses cannot reflect direct exposure to violence or selection into migration. Instead, the pattern of results points to a decline in return intentions. This section presents evidence supporting this interpretation and rules out alternative mechanisms.

7.1 Evidence for Declining Return Intentions

Rising violence, along with fear of victimization, plausibly reduces migrants' willingness to return to Mexico. In this framework, the increases in naturalization and marriage to US citizens reflect a shift toward permanent settlement. While violence does not affect adults' education or employment, positive effects on children's educational outcomes suggest that migrants also invest in their children's integration in the US.

If violence reduces return intentions, effects should be largest when return decisions are most flexible. Figure A7 explores differential effects by years since migration. The results show that newly arrived migrants (0-3 years) exhibit the largest increases in marriage to US citizens and naturalized Mexicans, consistent with return decisions being more flexible before migrants establish deep roots (Akee and Jones, 2019). In contrast, naturalization effects are strongest among migrants who have been in the US for 7-10 years, aligning with the eligibility window for permanent residency.

Additionally, effects are concentrated among low-educated migrants (Figure A8), who are more likely to rely on family-based legal pathways and less likely to qualify for employment-based visas. For these migrants, marriage and naturalization represent the most accessible routes to legal permanence.[29]

Finally, I examine actual return migration using the 2010 Mexican Census. The Census covers only 2005-2010, missing peak violence years (2011-2012). I find that higher violence is associated with lower return migration from the US (Column 2, Table A16). Although the estimates are imprecise, they are directionally consistent with declining return intentions. This aligns with evidence that the Mexican migrant cohort in my main analysis expands in response to violence (Column 3, Table B6), indicating reduced outflows.

Overall, migrants respond to violence by making destination-specific investments reflecting an

[29] One concern is that these marriages may be strategic rather than reflective of deeper integration. While I cannot observe marital intent, several factors mitigate this concern. First, spouses are in the same household, limiting scope for fraudulent arrangements. Second, I find no evidence of increased divorce rates following marriage, though this result is only suggestive (Appendix B.4). More broadly, these marriages reveal a preference to remain in the US and secure legal permanence, consistent with reduced return intentions.

intention to remain in the US. The type of investment varies with the available opportunities. Those who are eligible to naturalize, pursue it, newer migrants seek alternative legal pathways, and parents invest in their children's long-term integration. While I cannot directly observe migrants' intentions, the constellation of findings —destination investments, heterogeneity patterns aligned with available pathways to permanence, and suggestive evidence of reduced return flows —collectively point to declining return intentions as the primary mechanism.

7.2 Alternative Mechanisms

Emotional and Familial Ties One alternative is that violence triggers emotional distress or creates financial pressure to support family in Mexico. Prior research shows that worsening conditions in origin countries can adversely affect mental health (Akay et al., 2017; Nguyen and Connelly, 2018) or increase remittances, implying effects on labor supply and productivity, which I do not find evidence of. Given that Mexican men are more likely to migrate alone, one might expect gendered responses if family pressure were operative, but Figure A6 shows no substantial differences by sex. Violence also reduces the likelihood of new migrants joining existing households (Table A17), and broader Mexican migration to the US does not increase during this period (Appendix B.6). These patterns suggest emotional distress and familial obligations are not the primary drivers.

Marriage Markets Could changes in local marriage markets explain the increase in marriage to US citizens? I find no evidence to support this. There are no significant shifts in the number or characteristics of newly arrived Mexican migrants across commuting zones, nor in the local sex ratio (Table B4). The observed increase in marriage appears to be a behavioral response to violence reflecting changes in spouse preferences, rather than the result of structural shifts in partner availability.

Institutional Changes Another possibility is that US immigration officers became more lenient or sympathetic in response to rising violence. However, refugee and humanitarian programs did not expand during this period, officers are unlikely to have municipio-level information about conditions in Mexico, and there were no systematic changes in officer discretion.

8 Conclusion

This paper provides causal evidence on how localized violence in Mexican migrants' source regions affects their integration behaviors in the United States. I link migrants to their municipios of

origin using Matrícula Consular data and instrument for violence using pre-war locations of drug trade organizations and Colombian cocaine supply shocks.

Heightened violence increases naturalization and marriage to US citizens, including both US-born and naturalized Mexican spouses, suggesting a shift in partner preferences toward those who facilitate permanent residency. I find no evidence of changes in labor market outcomes or adult human capital investment, but I do find increased investment in children's education, especially among those born in Mexico. Taken together, the findings point to a shift in migrants' long-term intentions. As return to Mexico becomes less viable, migrants seek permanence by securing legal status through marriage or naturalization and by anchoring their families in the US.

These results carry implications for immigration policy. While refugees are often recognized as permanent arrivals, economic migrants from violence-affected regions may face similar circumstances without comparable support. Facilitating their integration —particularly in employment and language —may be especially beneficial when origin-country conditions reduce the likelihood of return.

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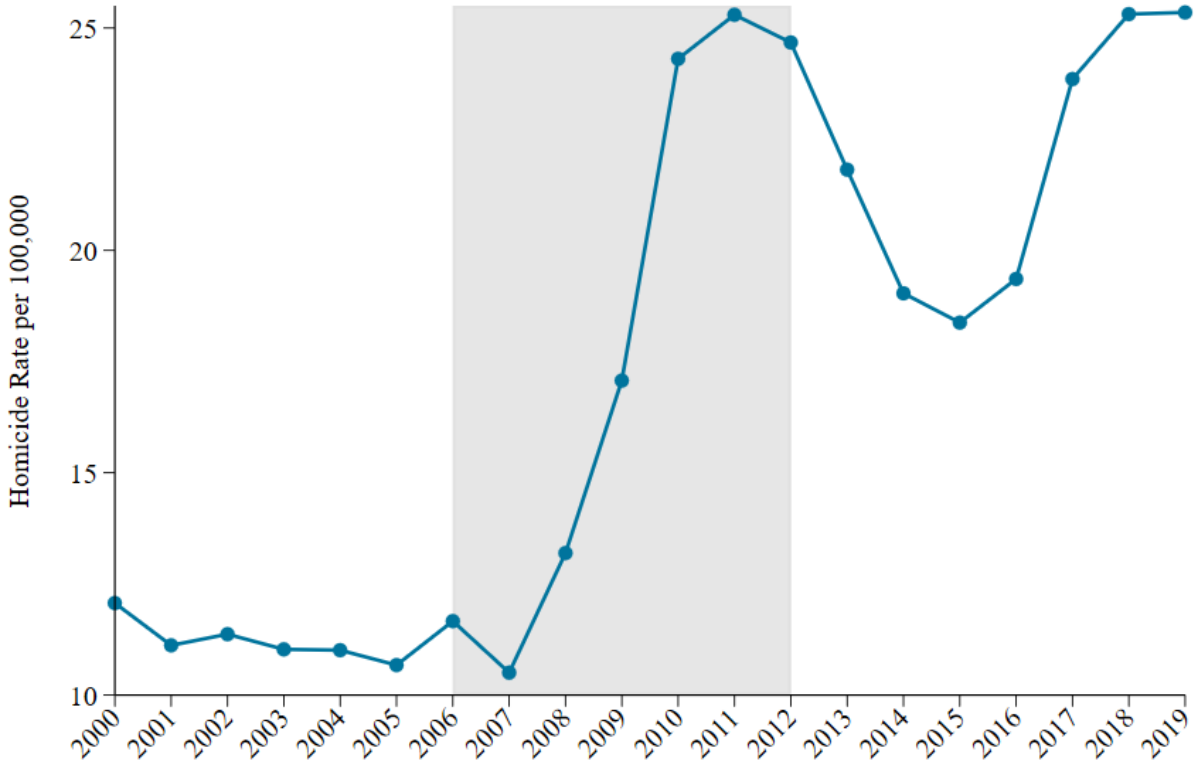
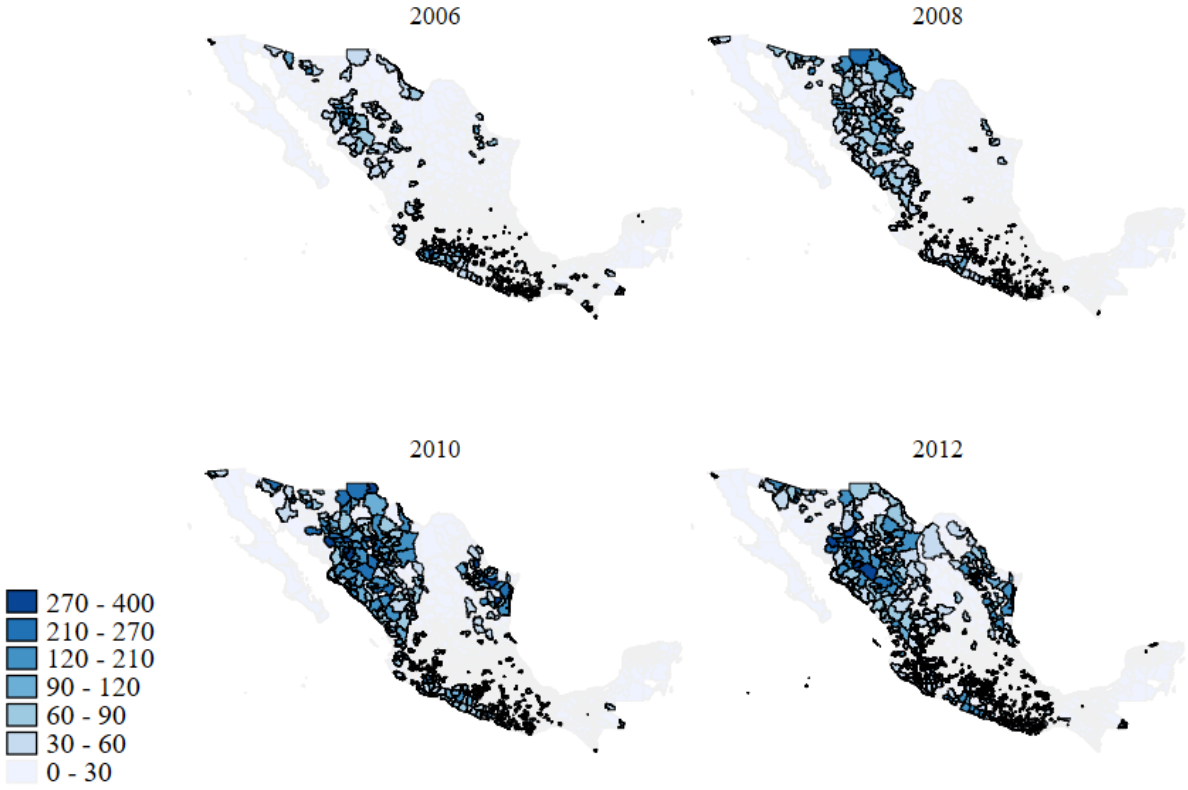
9 Figures and Tables

Figure 1: Annual Homicide Rate in Mexico, 2000-2019



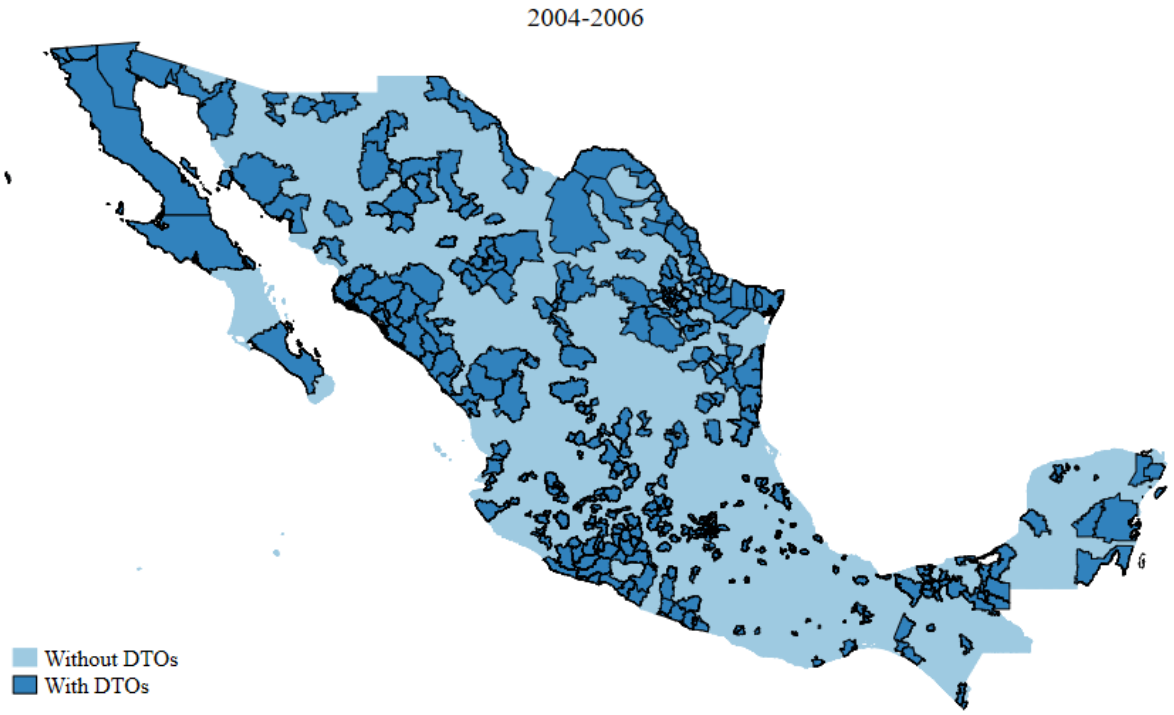
Notes: This figure displays the average annual homicide rate across Mexican municipios by year. Each municipio's homicide rate is calculated as its yearly number of homicides divided by the municipio's 2005 population per 100,000. The shaded region represents the time period covered in the analysis, 2006-2012. Data source: INEGI, 2000-2019.

Figure 2: Annual Homicide Rate in Mexican Municipios



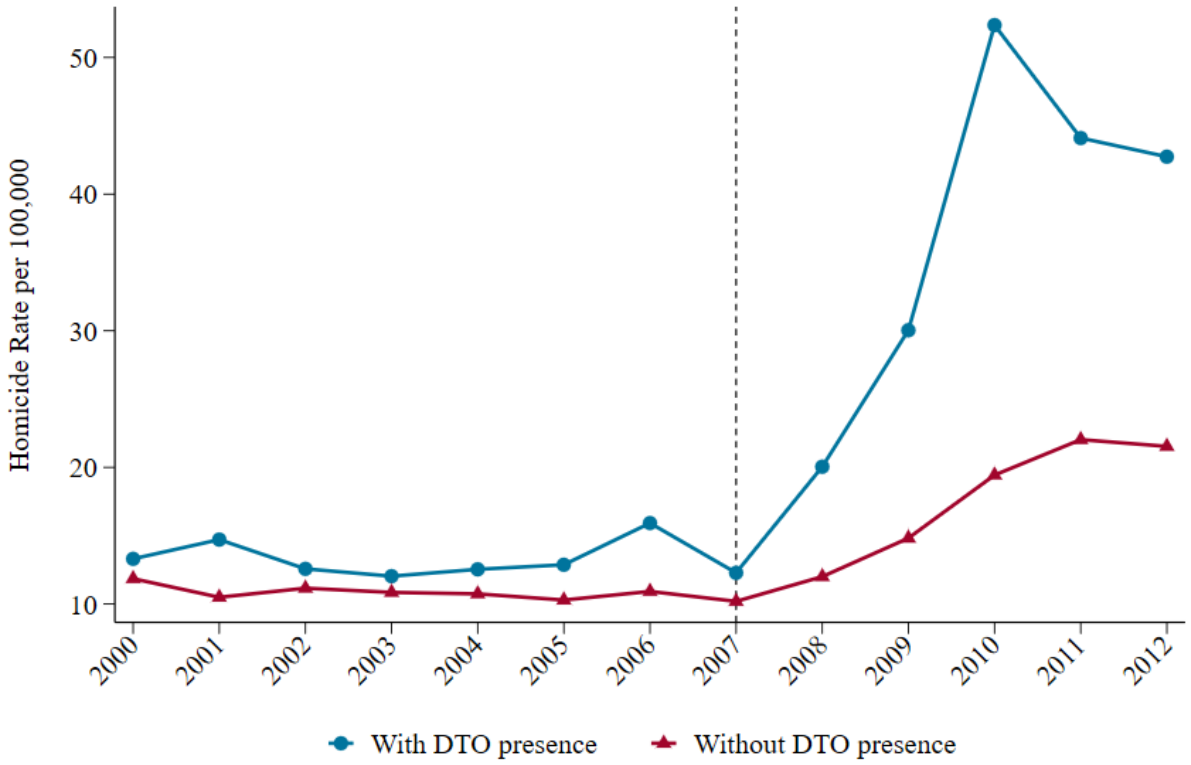
Notes: This figure displays maps of the distribution of the annual homicide rate per 100,000 persons across Mexican municipios by year. Data source: INEGI, 2006-2012.

Figure 3: Geographic Distribution of Drug Trade Organizations across Mexico



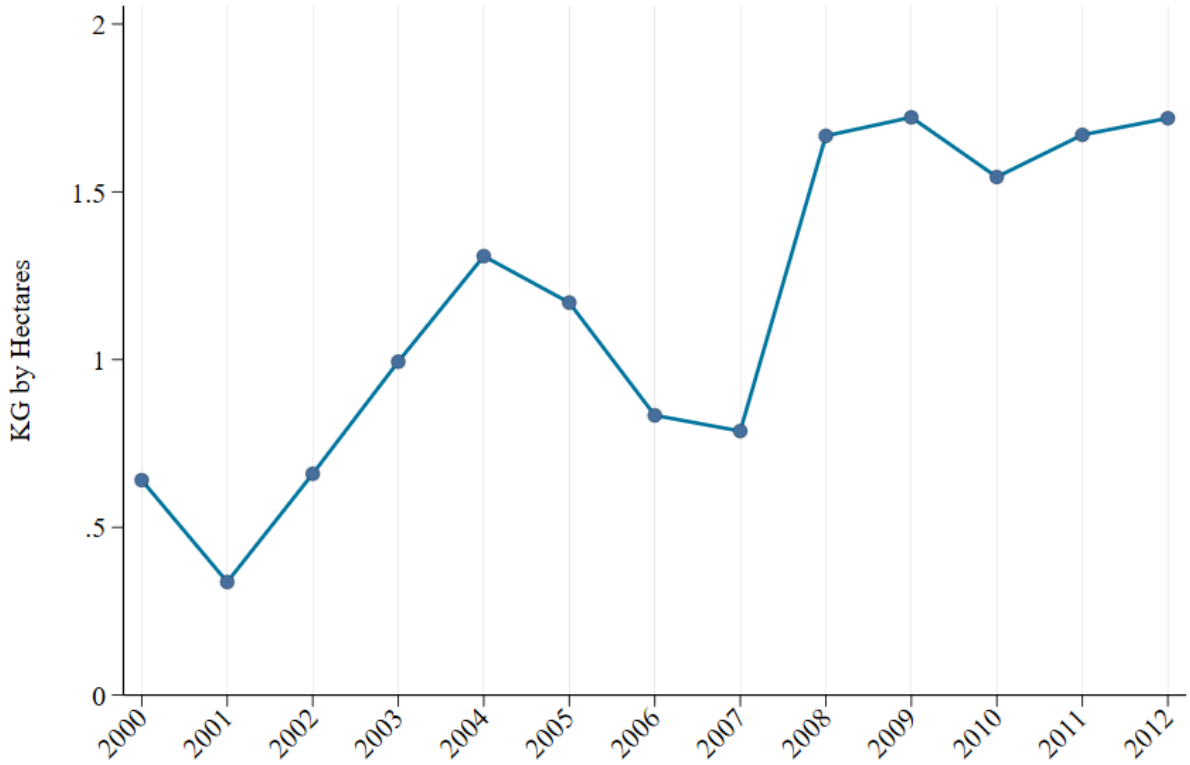
Notes: This figure illustrates the geographic distribution of Drug Trade Organizations (DTOs) in Mexican municipios between 2004 and 2006. Municipios colored in dark blue are those that had at least one DTO present in any of these three years, while municipios colored in light blue indicate those that had no DTOs. Only 15 percent of municipios had DTO presence between 2004 and 2006. Data source: Coscia and Rios (2012).

Figure 4: Yearly Trend in Homicide Rates Across Mexican Municipios by DTO Presence



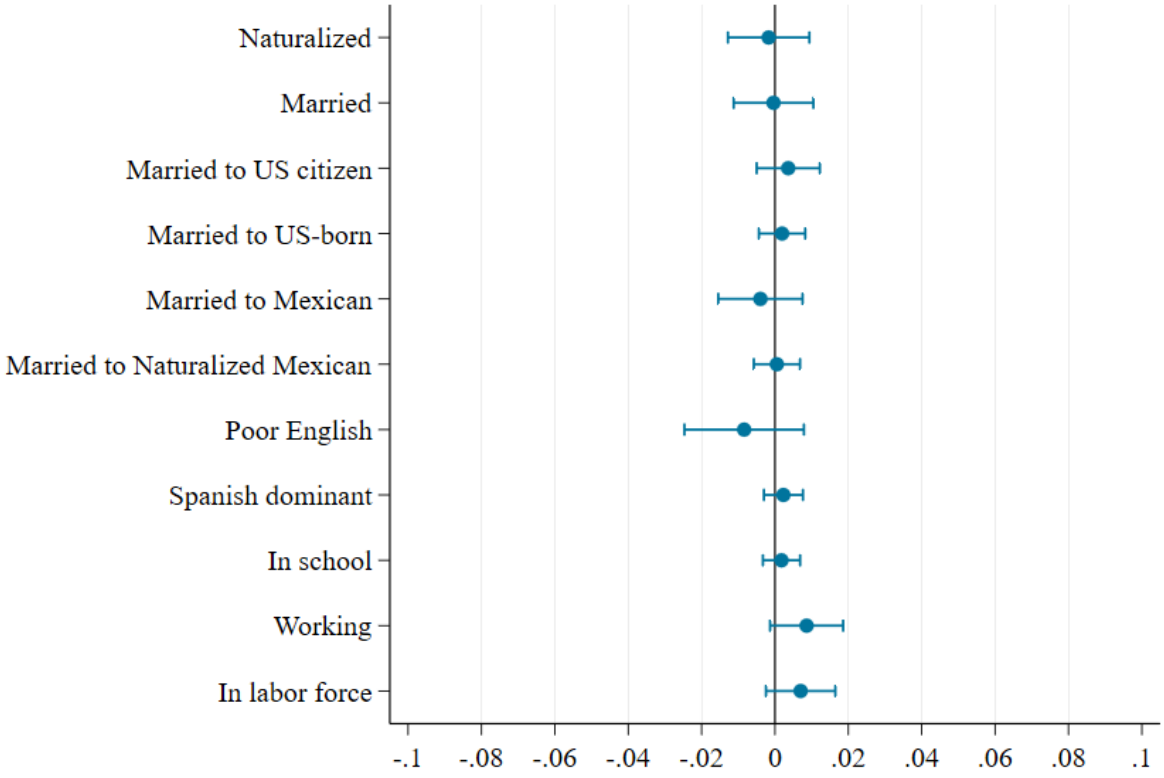
Notes: This figure shows the yearly trend in the average homicide rate per 100,000 across two group of municipios. The blue line represents the trend for municipios with any DTO presence between 2004 and 2006. The red line represents the trend for municipios with no DTO presence. The dashed vertical line marks the start of the war on drugs by Calderón's administration in 2007.

Figure 5: Annual Cocaine Seizures Per Coca Cultivated Land in Colombia



Notes: This figure shows the yearly trend in the total amount of cocaine seizures (KG) in Colombia normalized by the total coca cultivated land (Hectares) in Colombia. Data source: Colombia's Ministry of Justice and Law & International Narcotics Control Strategy Reports of the US Department of State, 2000-2012.

Figure 6: Effect of the Instrument on Lagged Change in Outcomes (2000-2006)



Notes: This figure plots the estimates and the 95 percent confidence intervals from regressions of the lagged changes in outcomes between 2000 and 2006 on IV exposure between 2007 and 2012 (equation 5). Each row represents a separate regression. The instrument is standardized to have mean zero and unit variance. Controls include average age, the proportion of males, the proportion of individuals with less than a high school degree, the proportion with a high school degree, the proportion with some college education, as well as changes in the Bartik demand shock and changes in immigration enforcement. Regressions are weighted by the commuting zone's 2006 Mexican population. The sample is restricted to working-age Mexican-born non-institutionalized individuals, without a restriction based on their year of migration. The data are aggregated at the commuting zone level, restricted to zones above the 50th percentile in Mexican population and balanced to match the main analysis, covering 345 commuting zones.

Table 1: Summary Statistics, ACS 2006-2012

	(1) Full Mexican Population	(2) 2000-2006 Cohort	(3) Analysis Sample	(4) (2)-(3)
Age	39.064	31.559	31.565	-0.006
	(11.700)	(9.532)	(9.536)	(0.035)
Male	0.539	0.559	0.558	0.001
	(0.498)	(0.496)	(0.497)	(0.002)
Less than a high school degree	0.547	0.577	0.577	-0.000
	(0.498)	(0.494)	(0.494)	(0.002)
High school degree or the equivalent	0.262	0.284	0.284	0.000
	(0.440)	(0.451)	(0.451)	(0.002)
Some college education	0.134	0.091	0.091	-0.000
	(0.340)	(0.288)	(0.288)	(0.001)
College degree or more	0.057	0.048	0.048	-0.000
	(0.233)	(0.214)	(0.214)	(0.001)
In School	0.053	0.050	0.051	-0.000
	(0.224)	(0.219)	(0.219)	(0.001)
Spanish Primary Language	0.959	0.971	0.972	-0.001
	(0.199)	(0.167)	(0.166)	(0.001)
Poor English	0.488	0.686	0.688	-0.002
	(0.500)	(0.464)	(0.463)	(0.002)
Years since migration	18.900	6.451	6.453	-0.001
	(11.544)	(2.861)	(2.860)	(0.011)
Naturalized	0.247	0.052	0.052	0.001
	(0.431)	(0.223)	(0.222)	(0.001)
Married	0.614	0.523	0.522	0.000
	(0.487)	(0.499)	(0.500)	(0.002)
Married to US citizen	0.238	0.108	0.107	0.001
	(0.426)	(0.311)	(0.310)	(0.001)
Married to US-born	0.101	0.058	0.057	0.001
	(0.302)	(0.234)	(0.232)	(0.001)
Married to Mexican	0.470	0.415	0.416	-0.000
	(0.499)	(0.493)	(0.493)	(0.002)
Married to Naturalized Mexican	0.122	0.044	0.044	0.000
	(0.327)	(0.204)	(0.204)	(0.001)
Married to Non-Mexican Fborn	0.022	0.013	0.013	0.000
	(0.148)	(0.114)	(0.114)	(0.000)
Employed	0.697	0.679	0.678	0.001
	(0.459)	(0.467)	(0.467)	(0.002)
In labor force	0.749	0.741	0.740	0.000
	(0.434)	(0.438)	(0.438)	(0.002)
Hourly wage	10.646	8.029	8.025	0.004
	(52.120)	(21.043)	(21.177)	(0.078)
Homicide Shock	26.453	21.894	21.932	-0.038
	(11.784)	(12.088)	(12.083)	(0.045)
Share from Municipio with DTO	0.460	0.444	0.444	-0.001**
	(0.092)	(0.093)	(0.091)	(0.000)
Observations	1494104	153030	141270	

Standard deviations in parentheses.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: This table presents the summary statistics using data from the 2006-2012 ACS surveys. The last two rows are constructed using MCAS and violence data, as described in Section 3.3. Column (1) provides the summary statistics for the full sample of working-age non-institutionalized Mexicans. Column (2) further restricts the sample to those that migrated between 2000 and 2006. Column (3) presents the summary statistics of the main sample used in the analysis, obtained after further restricting the sample to commuting zones with a population of Mexicans above the 50th percentile and those balanced (available in every year between 2006 and 2012). Finally, Column (4) reports the statistical differences in means between the samples in Columns (2) and (3).

Table 2: First Stage Effect of the Instrument on the Homicide Shock

	(1)	(2)	(3)	(4)	(5)	(6)
IV_{jt}	0.578***	0.428***	0.425***	0.618***	1.017***	1.016***
	(0.088)	(0.097)	(0.070)	(0.178)	(0.288)	(0.288)
Observations	141270	141270	141270	141270	141270	141270
R-sq.	0.403	0.500	0.766	0.574	0.808	0.808
F-excl. instrument	43.462	19.632	37.076	12.069	12.452	12.467
Mean HS	21.932	21.932	21.932	21.932	21.932	21.932
S.D. HS	12.083	12.083	12.083	12.083	12.083	12.083
Mean IV	0.630	0.630	0.630	0.630	0.630	0.630
S.D. IV	0.219	0.219	0.219	0.219	0.219	0.219
Controls	N	Y	Y	Y	Y	Y
CZ FE	N	N	Y	N	Y	Y
Year FE	N	N	N	Y	Y	Y
YSM FE	N	N	N	N	N	Y

Standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: This table presents the first stage results using OLS estimation and individual-level data from the ACS. The dependent variable is the homicide shock (HS) of each commuting zone j in year t. The independent variable is the instrument IV_{jt}. Both the HS and the instrument are normalized to have mean zero and unit variance. Controls include age, sex, and indicators of educational attainment, as well as measures for immigration enforcement and Bartik-style measures of labor demand. The standard errors are clustered at the commuting zone level in all specifications. The sample is restricted to working-age non-institutionalized Mexican-born individuals who migrated between 2000 and 2006, in balanced commuting zones with Mexican population above the 50th percentile.

Table 3: Effect of Violence on Naturalization and Marriage

	OLS			2SLS		
	(1) Naturalized	(2) Married	(3) Married to US citizen	(4) Naturalized	(5) Married	(6) Married to US citizen
Homicide Shock	0.003**	0.010***	0.006*	0.017**	0.028**	0.025***
	(0.001)	(0.004)	(0.003)	(0.007)	(0.014)	(0.007)
Observations	141270	141270	132832	141270	141270	132832
Mean Y - Baseline	0.039	0.515	0.086	0.039	0.515	0.086
Mean Y - Overall	0.052	0.522	0.107	0.052	0.522	0.107
Mean HS	21.93	21.93	22.10	21.93	21.93	22.10
S.D. HS	12.08	12.08	12.18	12.08	12.08	12.18

Standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: This table presents the OLS and 2SLS estimates of the effect of the homicide shock on naturalization, marriage, and marriage to US citizens. All outcomes are dummy variables. Both the HS and the instrument are normalized to have mean zero and unit variance. In all specifications, controls include age, sex, educational attainment, measures for immigration enforcement, and Bartik-style measures of labor demand. Additionally, I include commuting zone, year, and years since migration fixed effects and cluster the standard errors at the commuting zone level. The sample is restricted to working-age non-institutionalized Mexican-born individuals who migrated between 2000 and 2006, in balanced commuting zones with Mexican population above the 50th percentile. The baseline mean represents the outcomes' means in 2006.

Table 4: Effect of Violence on Marriage to Citizens by Spouse Nationality

	OLS			2SLS		
	(1) Married to US-born	(2) Married to Naturalized Non-Mexican F.born	(3) Married to Naturalized Mexican	(4) Married to US-born	(5) Married to Naturalized Non-Mexican F.born	(6) Married to Naturalized Mexican
Homicide Shock	0.002	-0.000	0.005***	0.011*	-0.001	0.015***
	(0.002)	(0.000)	(0.001)	(0.006)	(0.001)	(0.004)
Observations	132832	132832	132832	132832	132832	132832
Mean Y - Baseline	0.046	0.002	0.035	0.046	0.002	0.035
Mean Y - Overall	0.057	0.004	0.044	0.057	0.004	0.044
Mean HS	22.10	22.10	22.10	22.10	22.10	22.10
S.D. HS	12.18	12.18	12.18	12.18	12.18	12.18

Standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: This table presents the OLS and 2SLS estimates of the effect of the homicide shock on marriage to US citizens by the spouse's nationality. The outcomes are mutually exclusive dummy variables, indicating marriage to a US-born native (Columns 1 and 4), marriage to a naturalized non-Mexican foreign-born (Columns 2 and 5), and marriage to a naturalized Mexican migrant (Columns 3 and 6). Both the HS and the instrument are normalized to have mean zero and unit variance. In all specifications, controls include age, sex, educational attainment, measures for immigration enforcement, and Bartik-style measures of labor demand. Additionally, I include commuting zone, year, and years since migration fixed effects and cluster the standard errors at the commuting zone level. The sample is restricted to working-age non-institutionalized Mexican-born individuals who migrated between 2000 and 2006, in balanced commuting zones with Mexican population above the 50th percentile. The baseline mean represents the outcomes' means in 2006.

Table 5: Effect of Violence on Labor Supply and Human Capital Accumulation

	OLS				2SLS			
	(1) In Labor Force	(2) Working	(3) Hours Worked	(4) Hourly Wage	(5) In Labor Force	(6) Working	(7) Hours Worked	(8) Hourly Wage
Homicide Shock	0.007***	0.005**	0.406***	0.221*	0.009	0.001	0.249	0.901*
	(0.002)	(0.002)	(0.111)	(0.113)	(0.010)	(0.011)	(0.450)	(0.528)
Observations	141270	141270	141270	141270	141270	141270	141270	141270
Mean Y - Baseline	0.739	0.691	30.291	7.818	0.739	0.691	30.291	7.818
Mean Y - Overall	0.740	0.678	28.772	8.025	0.740	0.678	28.772	8.025
	(1) Years of Education	(2) In School	(3) Poor English	(4) Spanish Dominant	(5) Years of Education	(6) In School	(7) Poor English	(8) Spanish Dominant
Homicide Shock	-0.004	-0.003*	0.005	-0.002	0.095	-0.002	-0.009	-0.000
	(0.033)	(0.001)	(0.005)	(0.001)	(0.103)	(0.006)	(0.012)	(0.004)
Observations	141270	141270	141270	141270	141270	141270	141270	141270
Mean Y - Baseline	9.288	0.050	0.769	0.971	9.288	0.050	0.769	0.971
Mean Y - Overall	9.491	0.051	0.688	0.972	9.491	0.051	0.688	0.972
Mean IV	21.932	21.932	21.932	21.932	21.932	21.932	21.932	21.932
S.D. IV	12.083	12.083	12.083	12.083	12.083	12.083	12.083	12.083

Standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: This table presents the OLS and 2SLS estimates of the effect of the homicide shock on labor market (upper panel) and education outcomes (lower panel). Except for years of education, hours worked, and hourly wage, all outcomes are dummy variables. Both the HS and the instrument are normalized to have mean zero and unit variance. In all specifications, controls include age, sex, measures for immigration enforcement, and Bartik-style measures of labor demand. Additionally, I include commuting zone, year, and years since migration fixed effects and cluster the standard errors at the commuting zone level. The sample is restricted to working-age non-institutionalized Mexican-born individuals who migrated between 2000 and 2006, in balanced commuting zones with Mexican population above the 50th percentile. The baseline mean represents the outcomes' means in 2006.

Table 6: Effect of Violence on Children's Human Capital Accumulation

	(1) Years of Education	(2) In School	(3) Poor English	(4) Spanish Dominant
Homicide Shock	0.202***	-0.020	-0.030*	-0.028**
	(0.063)	(0.013)	(0.016)	(0.013)
Homicide Shock x US-born	-0.190***	0.000	-0.002	0.029***
	(0.057)	(0.006)	(0.008)	(0.009)
US-born	0.340	0.294***	-0.724***	-0.015
	(0.219)	(0.060)	(0.044)	(0.022)
Observations	55767	55767	55767	55767
Mean Y - Baseline	4.616	0.941	0.227	0.963
Mean Y - Overall	4.418	0.956	0.102	0.955
Mean HS	24.911	24.911	24.911	24.911
S.D. HS	14.181	14.181	14.181	14.181

Standard errors in parentheses.

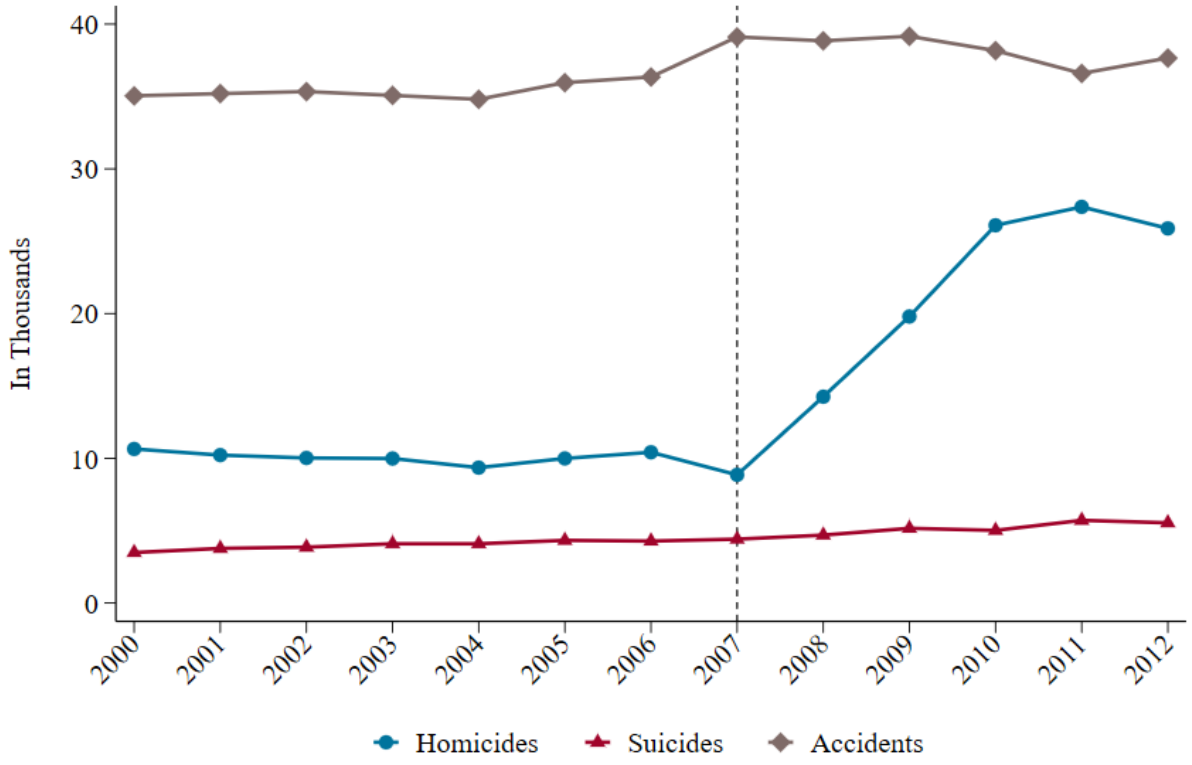
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: This table presents the 2SLS estimates of the effect of the homicide shock on education outcomes. Except for years of education, all outcomes are dummy variables. Both the HS and the instrument are normalized to have mean zero and unit variance. All specifications control for child's age and sex, immigration enforcement, and Bartik-style measures of labor demand. Additionally, I include commuting zone, year, and years since migration fixed effects and cluster the standard errors at the commuting zone level. The sample consists of children aged 6 to 18 living with a parent in the analysis sample. The analysis is limited to a balanced sample of commuting zones with a Mexican population above the 50th percentile. The baseline mean represents the outcomes' means in 2006.

Online Appendix

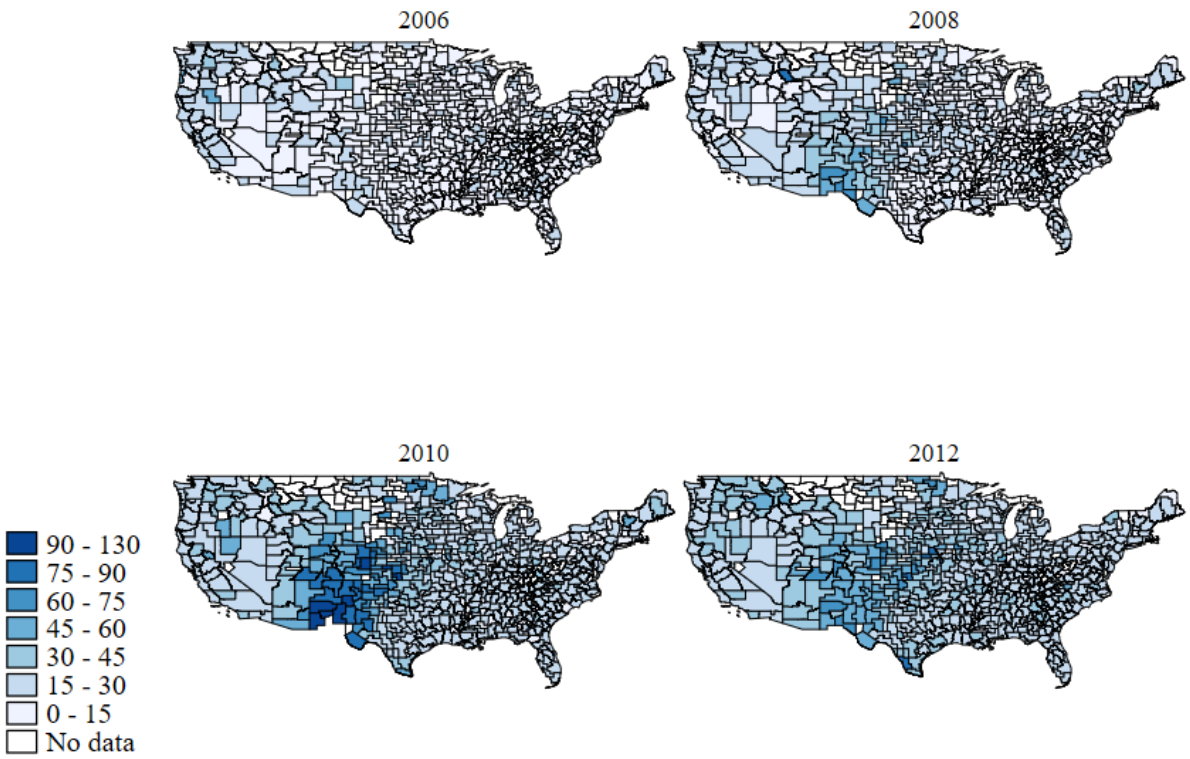
A Supplementary Figures and Tables

Figure A1: Annual Violent Deaths in Mexico by Cause of Death



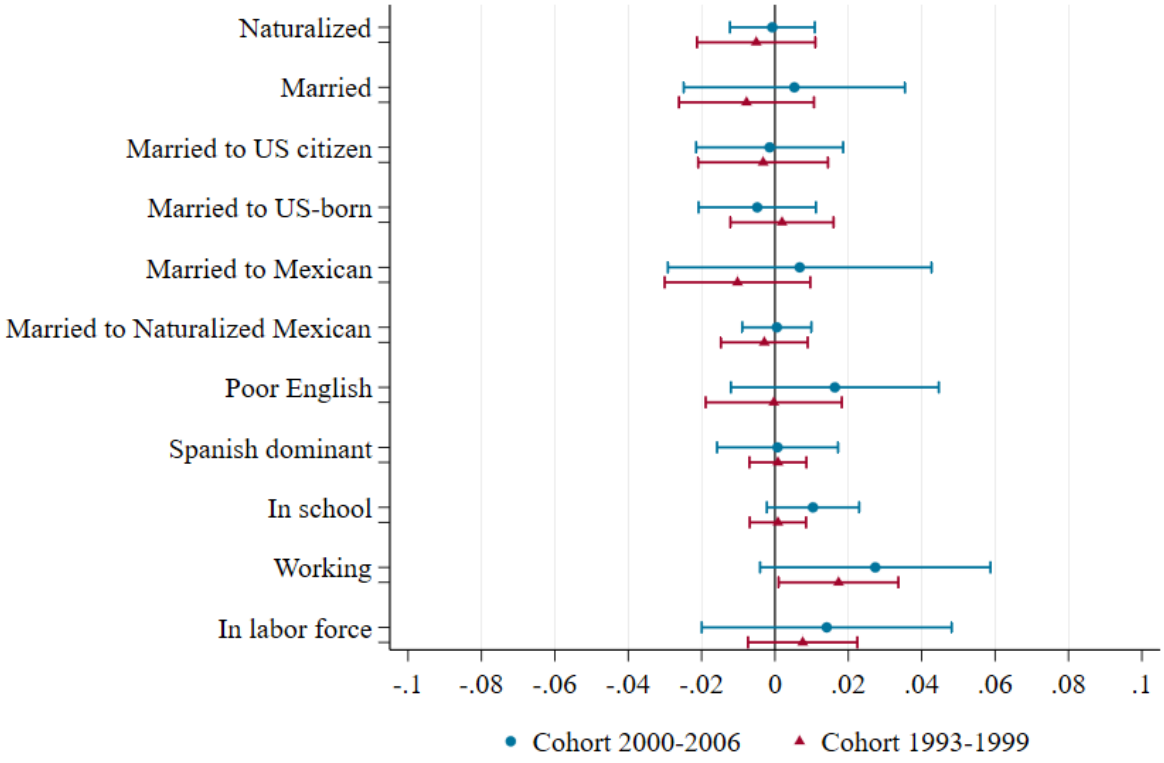
Notes: This figure displays the total number of deaths due to homicides (blue line), suicides (red line) and violent accidents (brown line) in Mexico by year. The dashed vertical line marks the start of the war on drugs by Calderón's administration in 2007. Data source: INEGI, 2000-2012.

Figure A2: Annual Homicide Shock in US Commuting Zones



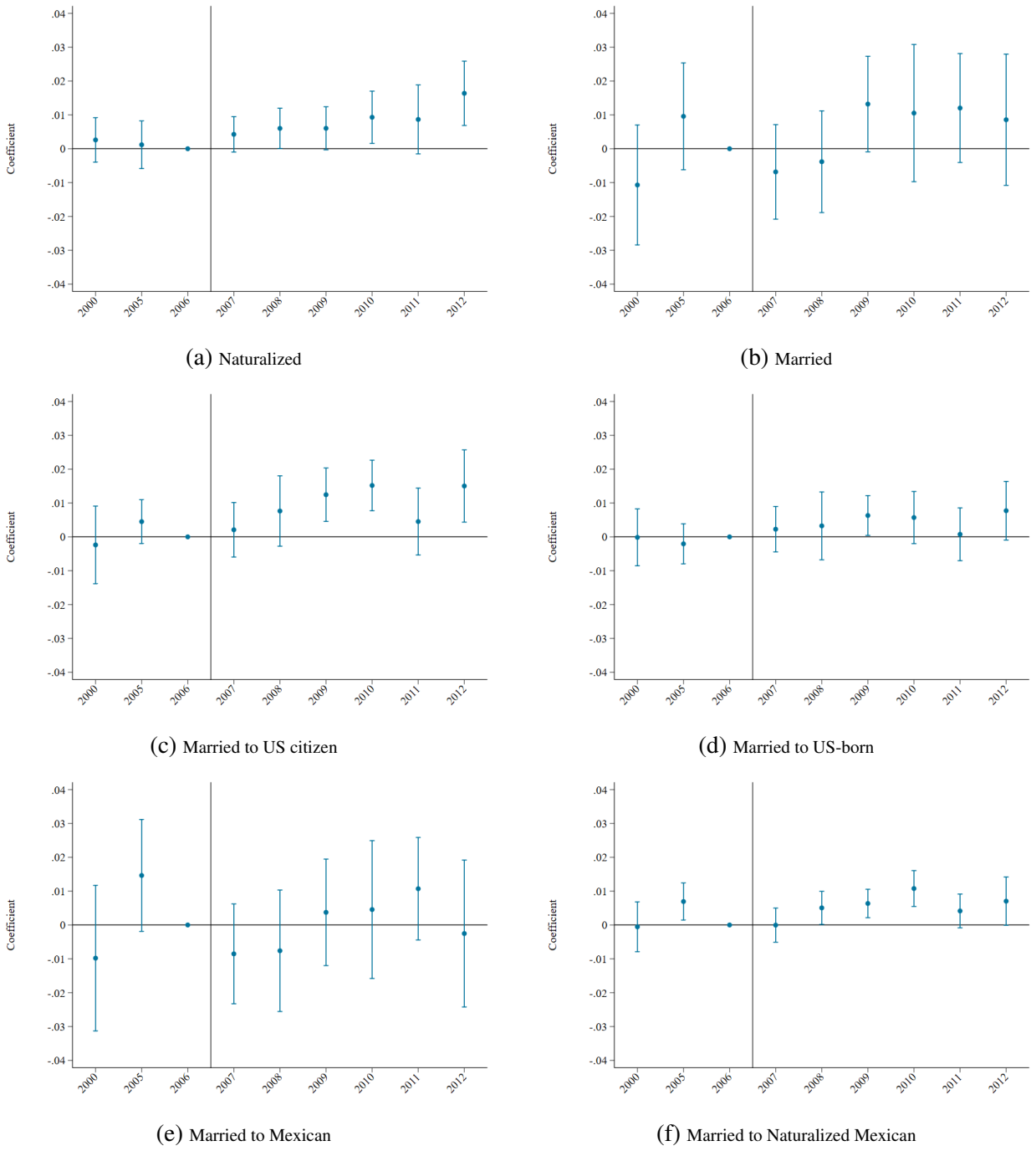
Notes: This figure displays maps of the distribution of the annual homicide shock across US commuting zones by year. The homicide shock is interpreted as the homicide rate per 100,000 persons in an "average" Mexican source municipio.

Figure A3: Pre-Period Integration Trends and Baseline DTO Exposure



Notes: This figure plots the estimates and the 95 percent confidence intervals from regressions of the change in outcomes between 2000 and 2006 on the commuting zone's baseline share of migrants from municipios with DTO (standardized). Each row represents a separate regression. Estimates are reported separately for two arrival cohorts: migrants who arrived in 2000-2006 (blue) and in 1993-1999 (red). Controls include average age, the proportion of males, the proportion of individuals with less than a high school degree, the proportion with a high school degree, the proportion with some college education, as well as changes in the Bartik demand shock and changes in immigration enforcement. Regressions are weighted by the commuting zone's 2006 Mexican population. The sample is restricted to working-age non-institutionalized Mexican-born individuals who migrated between 2000 and 2006, in balanced commuting zones with Mexican population above the 50th percentile.

Figure A4: Event-study Analysis



(a) Naturalized

(b) Married

(c) Married to US citizen

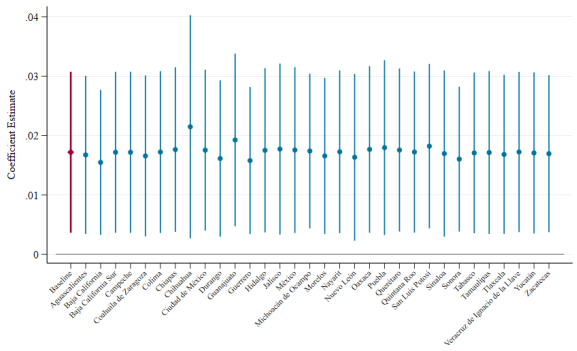
(d) Married to US-born

(e) Married to Mexican

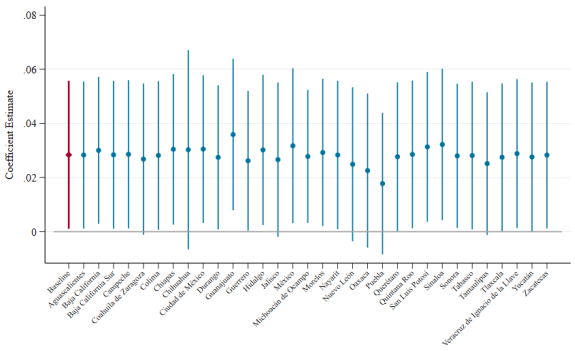
(f) Married to Naturalized Mexican

Notes: These figures report event-study estimates of the interaction between baseline DTO exposure in a commuting zone and year dummies, with 2006 as the reference year. Treatment intensity is defined as the baseline share of Mexican migrants in the CZ originating from municipios with a DTO presence, standardized to mean zero and unit variance. In all specifications, controls include age, sex, educational attainment, measures for immigration enforcement, and Bartik-style measures of labor demand. Additionally, I include commuting zone and year fixed effects, and cluster the standard errors at the commuting zone level. The sample is restricted to working-age non-institutionalized Mexican-born individuals who migrated between 2000 and 2006, in balanced commuting zones with Mexican population above the 50th percentile.

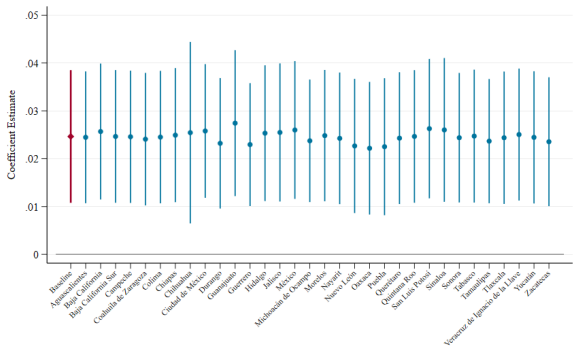
Figure A5: Sensitivity to Influential Origin States



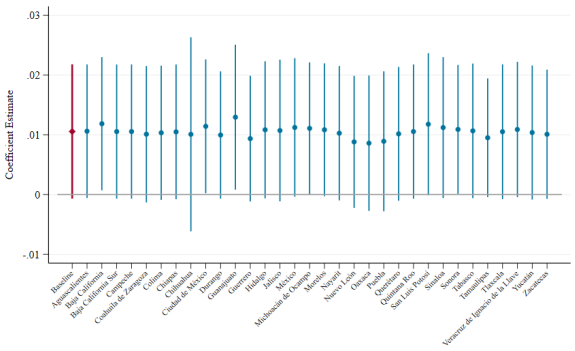
(a) Naturalized



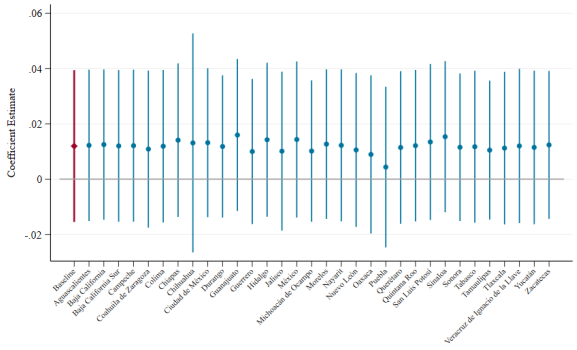
(b) Married



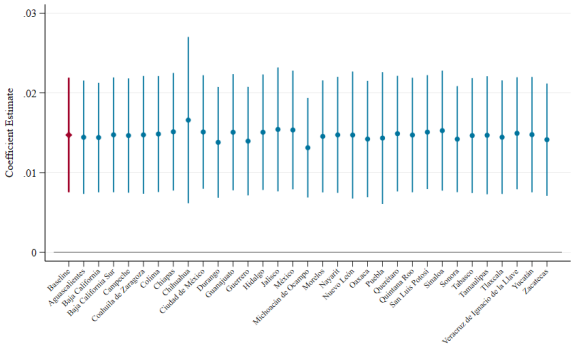
(c) Married to US citizen



(d) Married to US-born



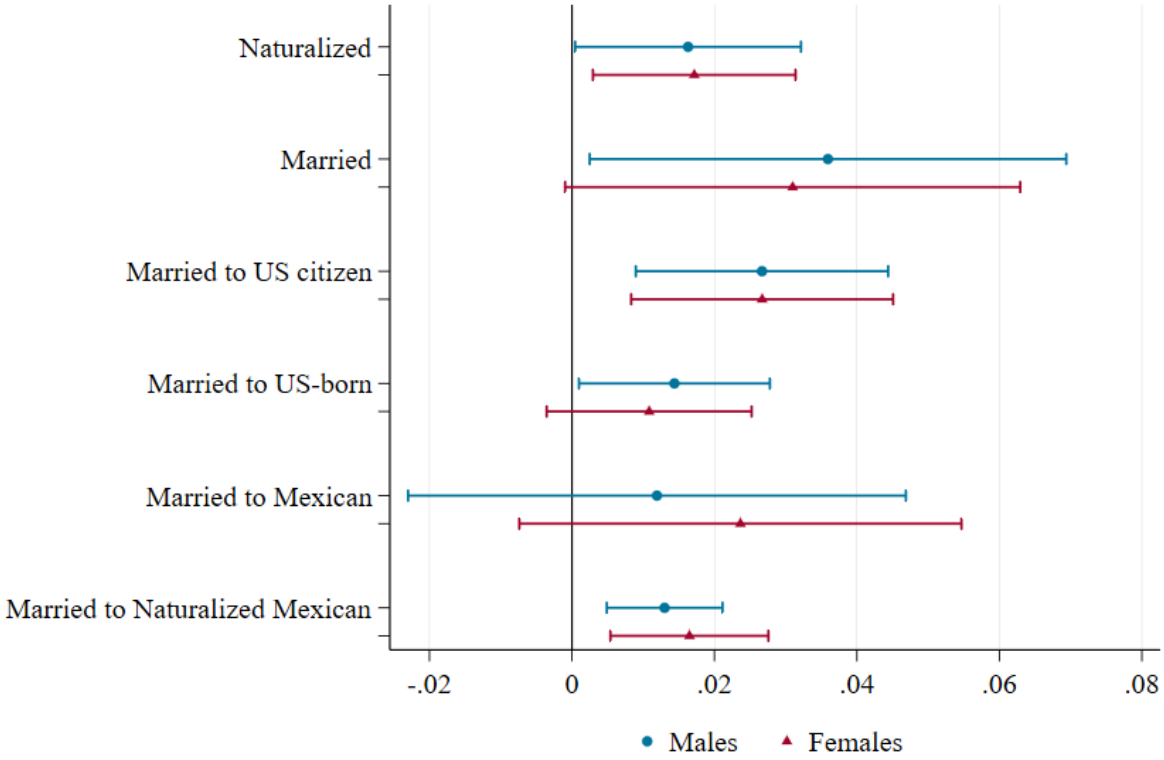
(e) Married to Mexican



(f) Married to Naturalized Mexican

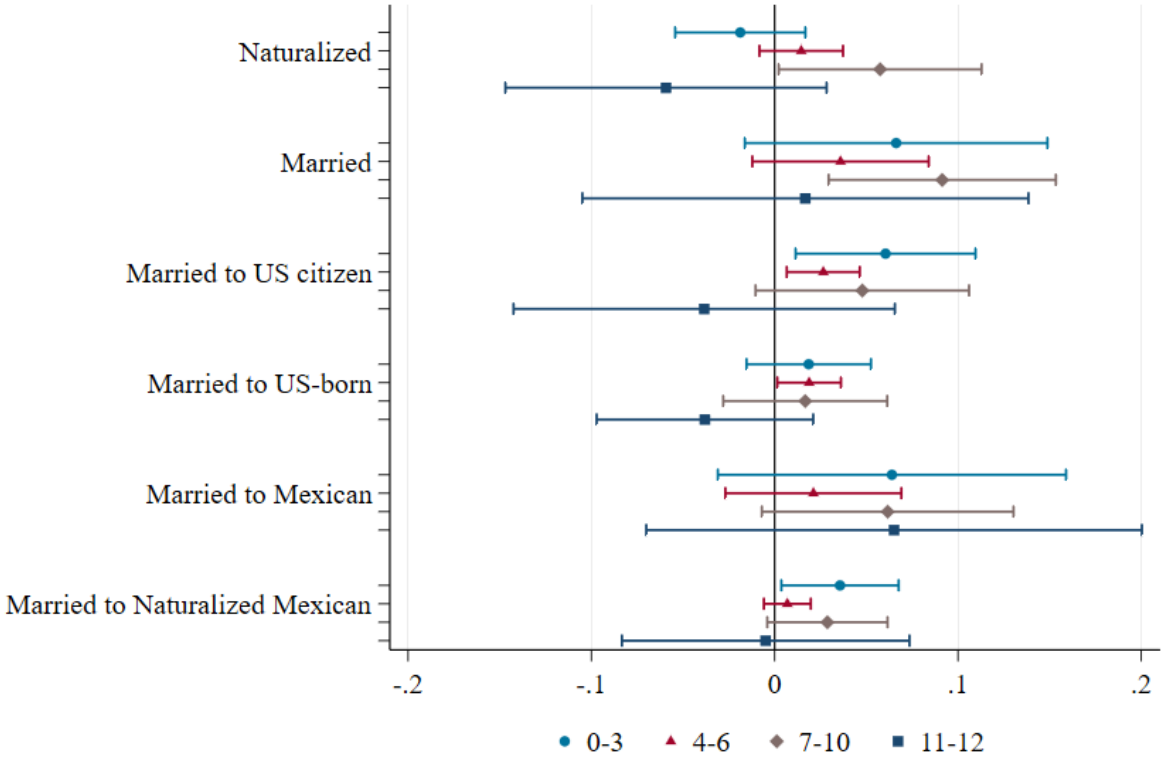
Notes: This figure presents 2SLS estimates of the effect of the homicide shock on the main outcomes, sequentially excluding each Mexican state. The red diamond shows the baseline estimate using all states; blue circles show estimates excluding the labeled state. Vertical lines represent 95 percent confidence intervals. Both the homicide shock and the instrument are normalized to have mean zero and unit variance. All specifications include controls for age, sex, educational attainment, immigration enforcement, and Bartik-style measures of labor demand, as well as commuting zone, year, and years since migration fixed effects. Standard errors are clustered at the commuting zone level. The sample is restricted to working-age non-institutionalized Mexican-born individuals who migrated between 2000 and 2006, in balanced commuting zones with Mexican population above the 50th percentile.

Figure A6: Heterogeneity Analysis by Sex



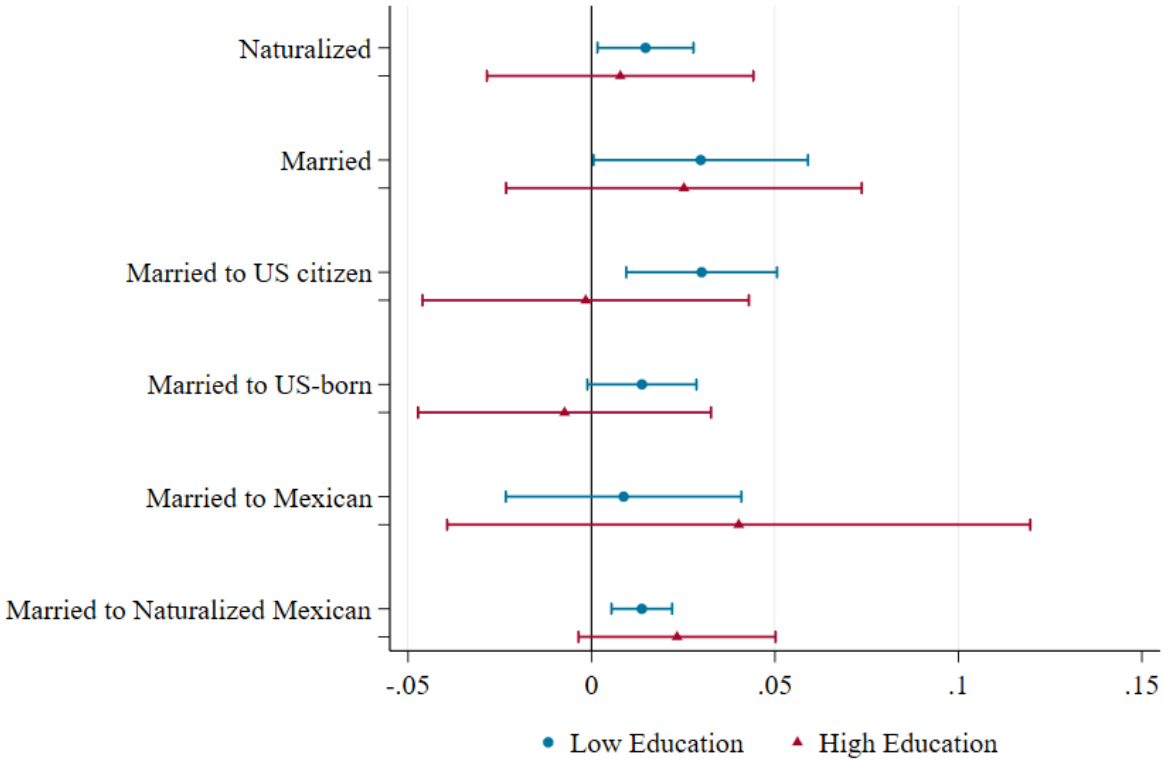
Notes: This figure plots the 2SLS estimates and the 95 percent confidence intervals of the differential effect of the homicide shock on the main outcomes by sex. Both the HS and the instrument are normalized to have mean zero and unit variance. In all specifications, controls include age, sex, educational attainment, measures for immigration enforcement, and Bartik-style measures of labor demand. Additionally, I include commuting zone, year, and years since migration fixed effects and cluster the standard errors at the commuting zone level. The sample is restricted to working-age non-institutionalized Mexican-born individuals who migrated between 2000 and 2006, in balanced commuting zones with Mexican population above the 50th percentile.

Figure A7: Heterogeneity Analysis by Years Since Migration



Notes: This figure plots the 2SLS estimates and the 95 percent confidence intervals of the differential effect of the homicide shock on the main outcomes by years since migration. Both the HS and the instrument are normalized to have mean zero and unit variance. In all specifications, controls include age, sex, educational attainment, measures for immigration enforcement, and Bartik-style measures of labor demand. Additionally, I include commuting zone, year, and years since migration fixed effects and cluster the standard errors at the commuting zone level. The sample is restricted to working-age non-institutionalized Mexican-born individuals who migrated between 2000 and 2006, in balanced commuting zones with Mexican population above the 50th percentile.

Figure A8: Heterogeneity Analysis by Educational Attainment



Notes: This figure plots the 2SLS estimates and the 95 percent confidence intervals of the differential effect of the homicide shock on the main outcomes by educational attainment. Low education refers to people with a high school degree or less, while high education refers to those with some college education or a college degree. Both the HS and the instrument are normalized to have mean zero and unit variance. In all specifications, controls include age, sex, educational attainment, measures for immigration enforcement, and Bartik-style measures of labor demand. Additionally, I include commuting zone, year, and years since migration fixed effects and cluster the standard errors at the commuting zone level. The sample is restricted to working-age non-institutionalized Mexican-born individuals who migrated between 2000 and 2006, in balanced commuting zones with Mexican population above the 50th percentile.

Table A1: Observable Characteristics of Victims of Homicides in Mexico (2006-2012)

	(1) Homicides	(2) Male	(3) Female	(4) Age $<$ 15	(5) $15 \leq$ Age ≤ 44	(6) $45 \leq$ Age ≤ 64	(7) Age ≥ 65
Number	130,971	116,880	13,511	2,804	93,901	20,388	5,124
Percent		89.24	10.32	2.14	71.70	15.57	3.91

Notes: Column (1) presents the total number of homicides in Mexico between 2006 and 2012. Columns (2) to (7) show the number and share of victims by their characteristics in percent. Age at death is missing for 7% of the sample.

Table A2: Pre-War Characteristics of DTO vs. Non-DTO Municipios (2000-2005)

	(1) Non-DTO	(2) DTO	(3) Difference
Male	0.49	0.49	0.002***
	(0.01)	(0.01)	(0.002)
Literate	0.73	0.81	0.078***
	(0.09)	(0.06)	(0.008)
Employment Rate	0.46	0.50	0.043***
	(0.07)	(0.07)	(0.007)
Emigration Rate	2.54	1.13	-1.410***
	(7.04)	(2.20)	(0.123)
Return Migration Rate	0.76	0.63	-0.124***
	(3.58)	(1.06)	(0.116)
Observations	1984	340	

Standard deviations in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: This table compares Mexican municipios with and without Drug Trafficking Organization presence between 2004 and 2006. The data are drawn from the 2000 and 2005 Mexican Censuses, and values represent the average across these two years. Column (1) reports means for municipios without DTO presence, while Column (2) reports means for municipios with DTO presence. Column (3) presents the difference between the two groups and the corresponding standard errors, which are clustered at the municipio level. Statistics are weighted by the municipio's 2005 population.

Table A3: Pre-War On Drugs Migrant Characteristics in High vs. Low Exposure Areas (2006)

	(1) High Exposure Areas	(2) Low Exposure Areas	(3) Difference
Age	30.452	29.519	0.933**
	(1.815)	(2.338)	(0.399)
Male	0.571	0.619	-0.048***
	(0.075)	(0.110)	(0.016)
Years since Migration	3.623	3.503	0.120**
	(0.273)	(0.502)	(0.059)
Less than a high school degree	0.587	0.572	0.015
	(0.082)	(0.132)	(0.016)
High school degree or the equivalent	0.277	0.319	-0.043***
	(0.065)	(0.119)	(0.012)
Some college education	0.083	0.064	0.019***
	(0.039)	(0.064)	(0.006)
College degree or more	0.054	0.044	0.010
	(0.035)	(0.051)	(0.006)
Years of Education	9.323	9.170	0.152
	(0.724)	(1.110)	(0.142)
Share Mexican	0.042	0.015	0.027***
	(0.045)	(0.017)	(0.004)
Share from Mun with DTO	0.500	0.329	0.171***
	(0.093)	(0.060)	(0.008)
Observations	172	173	

Standard deviations in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: This table presents the demographics characteristics of high exposure areas (Column 1) and low exposure areas (Column 2) in 2006. High (low) exposure areas are defined as commuting zones that have a share of migrants from municipios with DTO presence above (below) the 50th percentile. Column (3) calculates the difference between statistics reported in Columns (1) and (2) and reports the standard error of that difference, clustered at the commuting-zone level. Statistics are weighted by the commuting zone's 2006 Mexican population. The sample is restricted to balanced commuting zones with Mexican population above the 50th percentile.

Table A4: Pre-War On Drugs Migrant Outcomes in High vs. Low Exposure Areas (2006)

	(1) High Exposure Areas	(2) Low Exposure Areas	(3) Difference
Naturalized	0.040	0.041	-0.001
	(0.034)	(0.055)	(0.007)
Married	0.531	0.483	0.048**
	(0.082)	(0.136)	(0.021)
Married to US-born	0.051	0.046	0.005
	(0.041)	(0.077)	(0.007)
Married to US citizen	0.098	0.080	0.018
	(0.058)	(0.105)	(0.011)
Married to Mexican	0.422	0.363	0.058***
	(0.082)	(0.134)	(0.020)
Married to Naturalized Mexican	0.042	0.030	0.012**
	(0.035)	(0.058)	(0.005)
Working	0.665	0.723	-0.058***
	(0.074)	(0.104)	(0.014)
In Labor Force	0.716	0.771	-0.055***
	(0.065)	(0.097)	(0.012)
Hours Worked	29.227	31.618	-2.391***
	(3.256)	(4.635)	(0.608)
Hourly Wage	7.824	7.693	0.131
	(2.079)	(2.311)	(0.557)
In School	0.057	0.042	0.016***
	(0.032)	(0.040)	(0.005)
Spanish Primary Language	0.975	0.963	0.012**
	(0.032)	(0.061)	(0.006)
Nonfluent in English	0.778	0.758	0.020
	(0.069)	(0.116)	(0.017)
Observations	172	173	

Standard deviations in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: This table presents the average outcomes of high exposure areas (Column 1) and low exposure areas (Column 2) in 2006. High (low) exposure areas are defined as commuting zones that have a share of migrants from municipios with DTO presence above (below) the 50th percentile. Column (3) calculates the difference between statistics reported in Columns (1) and (2) and reports the standard error of that difference, clustered at the commuting-zone level. Statistics are weighted by the commuting zone's 2006 Mexican population. The sample is restricted to balanced commuting zones with Mexican population above the 50th percentile.

Table A5: Change in Bartik-Style Labor Demand Measures (2006–2012) in High vs. Low Exposure Areas

	(1) High Exposure Areas	(2) Low Exposure Areas	(3) Difference
US-born Bartik Employment	-0.012	-0.013	0.001
	(0.042)	(0.046)	(0.009)
Foreign-born Bartik Employment	-0.108	-0.122	0.014
	(0.119)	(0.193)	(0.039)
Low Educated Bartik Employment	-0.166	-0.157	-0.010
	(0.082)	(0.089)	(0.022)
High Educated Bartik Employment	0.047	0.053	-0.006
	(0.033)	(0.043)	(0.007)
Observations	172	173	

Standard deviations in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: This table compares the change in four Bartik-style measures between 2006 and 2012 across high and low exposure commuting zones. High (low) exposure areas are defined as commuting zones that have a share of migrants from municipios with DTO presence above (below) the 50th percentile. Column (1) reports the average change for high exposure areas, Column (2) for low exposure areas, and Column (3) shows the difference in changes between the two, with standard errors clustered at the commuting zone level. Statistics are weighted by the commuting zone's 2006 Mexican population. The sample is restricted to balanced commuting zones with Mexican population above the 50th percentile.

Table A6: Effect of Violence on Marriage by Spouse Presence

	OLS		2SLS	
	(1) Spouse Present	(2) Spouse Absent	(3) Spouse Present	(4) Spouse Absent
Homicide Shock	0.006	0.005*	0.015	0.013**
	(0.004)	(0.002)	(0.013)	(0.007)
Observations	141270	141270	141270	141270
Mean Y - Baseline	0.414	0.102	0.414	0.102
Mean Y - Overall	0.452	0.070	0.452	0.070
Mean HS	21.93	21.93	21.93	21.93
S.D. HS	12.08	12.08	12.08	12.08

Standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: This table presents the OLS and 2SLS estimates of the effect of the homicide shock on marriage by spouse presence. In Columns (1) and (3), the outcome is a dummy variable that takes 1 if the individual is married and their spouse is present in the household. In Columns (2) and (4), the outcome is a dummy variable that takes 1 if the individual is married and their spouse is absent. Both the HS and the instrument are normalized to have mean zero and unit variance. In all specifications, controls include age, sex, educational attainment, measures for immigration enforcement, and Bartik-style measures of labor demand. Additionally, I include commuting zone, year, and years since migration fixed effects and cluster the standard errors at the commuting zone level. The sample is restricted to working-age non-institutionalized Mexican-born individuals who migrated between 2000 and 2006, in balanced commuting zones with Mexican population above the 50th percentile. The baseline mean represents the outcomes' means in 2006.

Table A7: Effect of Violence on Marriage by Spouse Nationality

	OLS			2SLS		
	(1) Married to US-born	(2) Married to non-Mexican F.born	(3) Married to Mexican	(4) Married to US-born	(5) Married to non-Mexican F.born	(6) Married to Mexican
Homicide Shock	0.002	-0.001	0.007*	0.011*	-0.003	0.012
	(0.002)	(0.001)	(0.004)	(0.006)	(0.002)	(0.014)
Observations	132832	132832	132832	132832	132832	132832
Mean Y - Baseline	0.046	0.009	0.405	0.046	0.009	0.405
Mean Y - Overall	0.057	0.013	0.416	0.057	0.013	0.416
Mean HS	22.10	22.10	22.10	22.10	22.10	22.10
S.D. HS	12.18	12.18	12.18	12.18	12.18	12.18

Standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: This table presents the OLS and 2SLS estimates of the effect of the homicide shock on marriage by spouse nationality. The outcomes are mutually exclusive dummy variables, indicating marriage to a US-born native (Columns 1 and 4), marriage to a non-Mexican foreign-born migrant (Column 2 and 5), and marriage to a Mexican-born migrant (Columns 3 and 6). Both the HS and the instrument are normalized to have mean zero and unit variance. In all specifications, controls include age, sex, educational attainment, measures for immigration enforcement, and Bartik-style measures of labor demand. Additionally, I include commuting zone, year, and years since migration fixed effects and cluster the standard errors at the commuting zone level. The sample is restricted to working-age non-institutionalized Mexican-born individuals who migrated between 2000 and 2006, in balanced commuting zones with Mexican population above the 50th percentile. The baseline mean represents the outcomes' means in 2006.

Table A8: Population Estimates of the 2000-2006 Migration Cohort

	ACS Survey Year						
	2006	2007	2008	2009	2010	2011	2012
2000-2006 Cohort Units	19,063	20,110	19,100	19,906	20,952	20,280	21,859
2000-2006 Cohort Population	2,415,697	2,552,350	2,454,908	2,390,712	2,513,292	2,455,322	2,423,205

Notes: This table presents estimates of the population used in the main analysis, consisting of working-age non-institutionalized Mexicans who migrated between 2000 and 2006. The sample is further restricted to balanced commuting zones with a Mexican population above the 50th percentile. The first row shows the number of units in every ACS survey year, and the second row shows the population obtained through weighting the units by their personal survey weights.

Table A9: Effect of Violence on Sample Composition

	(1) Age	(2) Male	(3) Less than HS degree	(4) HS degree	(5) Some college	(6) College degree	(7) Yrs since Migration
Homicide Shock	-0.080	0.035***	-0.008	0.000	0.009	-0.002	0.043
	(0.198)	(0.012)	(0.013)	(0.012)	(0.006)	(0.004)	(0.050)
Observations	141270	141270	141270	141270	141270	141270	141270
Mean Y - Baseline	30.088	0.597	0.582	0.291	0.076	0.050	3.556
Mean Y - Overall	31.565	0.558	0.577	0.284	0.091	0.048	6.453
Mean HS	21.932	21.932	21.932	21.932	21.932	21.932	21.932
S.D. HS	12.083	12.083	12.083	12.083	12.083	12.083	12.083
CZ FE	Y	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y	Y

Standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: This table presents the 2SLS estimates of the effect of the homicide shock on migrants' observable characteristics. Both the HS and the instrument are normalized to have mean zero and unit variance. In all specifications, I control for measures of immigration enforcement and Bartik-style measures of labor demand. Additionally, I include commuting zone and year fixed effects, and cluster the standard errors at the commuting zone level. The sample is restricted to working-age non-institutionalized Mexican-born individuals who migrated between 2000 and 2006, in balanced commuting zones with Mexican population above the 50th percentile. The baseline mean represents the outcomes' means in 2006.

Table A10: Long-Difference Analysis

	(1) Naturalized	(2) Married	(3) Married to US citizen	(4) Married to US-born	(5) Married to Mexican	(6) Married to Naturalized Mexican
Cumulative Homicide Shock	0.028**	0.028	0.045**	0.026*	0.006	0.018*
	(0.013)	(0.028)	(0.018)	(0.015)	(0.032)	(0.010)
Observations	345	345	344	344	344	344
Mean Y - Overall	0.035	0.021	0.048	0.027	0.011	0.017
Mean HS	372.77	372.77	372.79	372.79	372.79	372.79
S.D. HS	83.34	83.34	83.33	83.33	83.33	83.33

Standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: This table reports long-difference 2SLS estimates of the effect of cumulative homicide exposure on migrant outcomes between 2006 and 2012. The dependent variables are measured as the change in outcomes between 2012 and 2006. Cumulative homicide shock is instrumented with the interaction of the commuting zone's share of migrants from DTO municipios and the change in normalized cocaine seizures over the same period. Both are standardized to have mean zero and unit variance. Controls include pre-period average age, the proportion of males, the proportion of individuals with less than a high school degree, the proportion with a high school degree, the proportion with some college education, as well as changes in the Bartik demand shock and changes in immigration enforcement. Regressions are weighted by the commuting zone's 2006 Mexican population. The sample is restricted to working-age non-institutionalized Mexican-born individuals who migrated between 2000 and 2006, in balanced commuting zones with Mexican population above the 50th percentile.

Table A11: Alternative IV Estimators and Confidence Interval Computation

	(1) Naturalized	(2) Married	(3) Maried to US citizen	(4) Married to US-born	(5) Married to Mexican	(6) Married to Naturalized Mexican
2SLS estimates	0.017**	0.028**	0.0246***	0.0105*	0.0119	0.0147***
	(0.007)	(0.014)	(0.007)	(0.06)	(0.0139)	(0.004)
	[0.0037, 0.0307]	[0.0031, 0.0175]	[0.0108, 0.0385]	[-0.0007, 0.0217]	[-0.0154, 0.0393]	[0.0075, 0.021]
Anderson-Rubin CI	[0.0059, 0.04]	[0.00054, 0.067]	[0.013, 0.048]	[-0.0005, 0.0271]	[-0.02, 0.046]	[0.008, 0.0267]
LIML estimates	0.0171**	0.0283**	0.0246***	0.0105*	0.0119	0.0147***
	(0.0069)	(0.0139)	(0.0070)	(0.0057)	(0.0139)	(0.004)

Standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: In the first row, I report the 2SLS estimates of effect of the homicide shock on the main outcomes, along with their standard errors (in parentheses) and confidence intervals (in brackets), computed using standard asymptotic theory. In the second row, I report the Anderson-Rubin confidence intervals. In the third row, I report the LIML estimates along with their standard errors. Both the HS and the instrument are normalized to have mean zero and unit variance. In all specifications, controls include age, sex, educational attainment, measures for immigration enforcement, and Bartik-style measures of labor demand. Additionally, I include commuting zone, year, and years since migration fixed effects and cluster the standard errors at the commuting zone level.The sample is restricted to working-age non-institutionalized Mexican-born individuals who migrated between 2000 and 2006, in balanced commuting zones with Mexican population above the 50th percentile.

Table A12: Robustness Checks I - Spillovers and Network Construction

	(1) Naturalized	(2) Married	(3) Married to US citizen	(4) Married to US-born	(5) Married to Mexican	(6) Married to Naturalized Mexican
Panel A: Excluding Bordering CZs						
Homicide Shock	0.021**	0.043*	0.040***	0.021***	0.017	0.019***
	(0.009)	(0.022)	(0.011)	(0.008)	(0.021)	(0.006)
Observations	130950	130950	122988	122988	122988	122988
Mean Y - Baseline	0.037	0.510	0.078	0.041	0.402	0.033
Mean Y - Overall	0.049	0.516	0.099	0.052	0.413	0.041
Mean HS	21.06	21.06	21.21	21.21	21.21	21.21
S.D. HS	9.31	9.31	9.33	9.33	9.33	9.33
Panel B: Year-by-Macro Region FE						
Homicide Shock	0.012*	0.025*	0.021***	0.010	0.008	0.010***
	(0.006)	(0.013)	(0.008)	(0.007)	(0.015)	(0.004)
Observations	141270	141270	132832	132832	132832	132832
Mean Y - Baseline	0.039	0.515	0.086	0.046	0.405	0.035
Mean Y - Overall	0.052	0.522	0.107	0.057	0.416	0.044
Mean HS	21.93	21.93	22.10	22.10	22.10	22.10
S.D. HS	12.08	12.08	12.18	12.18	12.18	12.18
Panel C: HS using 2006 network						
Homicide Shock	0.017**	0.027**	0.024***	0.010*	0.012	0.014***
	(0.006)	(0.013)	(0.007)	(0.005)	(0.014)	(0.003)
Observations	141270	141270	132832	132832	132832	132832
Mean Y - Baseline	0.039	0.515	0.086	0.046	0.405	0.035
Mean Y - Overall	0.052	0.522	0.107	0.057	0.416	0.044
Mean HS	21.63	21.63	21.79	21.79	21.79	21.79
S.D. HS	11.59	11.59	11.67	11.67	11.67	11.67
Panel D: IV using 2006 & 2007 networks						
Homicide Shock	0.017**	0.031**	0.026***	0.012**	0.012	0.015***
	(0.007)	(0.014)	(0.007)	(0.006)	(0.014)	(0.004)
Observations	141270	141270	132832	132832	132832	132832
Mean Y - Baseline	0.039	0.515	0.086	0.046	0.405	0.035
Mean Y - Overall	0.052	0.522	0.107	0.057	0.416	0.044
Mean HS	21.93	21.93	22.10	22.10	22.10	22.10
S.D. HS	12.08	12.08	12.18	12.18	12.18	12.18
Panel E: Network using First-time and Renewal MCAS						
Homicide Shock	0.019**	0.031**	0.027***	0.011*	0.013	0.016***
	(0.008)	(0.015)	(0.008)	(0.006)	(0.015)	(0.004)
Observations	141270	141270	132832	132832	132832	132832
Mean Y - Baseline	0.039	0.515	0.086	0.046	0.405	0.035
Mean Y - Overall	0.052	0.522	0.107	0.057	0.416	0.044
Mean HS	22.60	22.60	22.78	22.78	22.78	22.78
S.D. HS	13.22	13.22	13.32	13.32	13.32	13.32
Panel F: Excluding Arizona						
Homicide Shock	0.016**	0.034**	0.026***	0.010*	0.020	0.017***
	(0.007)	(0.015)	(0.008)	(0.006)	(0.014)	(0.004)
Observations	135522	135522	127392	127392	127392	127392
Mean Y - Baseline	0.040	0.516	0.087	0.046	0.405	0.036
Mean Y - Overall	0.052	0.523	0.107	0.057	0.417	0.044
Mean HS	21.71	21.71	21.87	21.87	21.87	21.87
S.D. HS	12.07	12.07	12.17	12.17	12.17	12.17

Standard errors in parentheses.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: This table presents the 2SLS estimates of the effect of the homicide shock on the main outcomes. Both the HS and the instrument are standardized. In all specifications, controls include age, sex, educational attainment, measures for immigration enforcement, and Bartik-style measures of labor demand. Fixed effects for commuting zone, year, and years since migration are included, with standard errors clustered at the commuting zone level. The sample is restricted to working-age non-institutionalized Mexican-born individuals who migrated between 2000 and 2006, in balanced commuting zones with Mexican population above the 50th percentile. The baseline mean represents the outcomes' means in 2006. Panel A excludes eleven border commuting zones. Panel B adds Year × Macro-region fixed effects. Panel C constructs the homicide shock using 2006 network weights. Panel D defines instrument weights using 2006-2007 Matrícula cards instead of 2006 only. Panel E defines network weights based on both initial and renewal MCAS issuances. Panel F excludes Arizona commuting zones. I map commuting zones to states using crosswalks from David Dorn (Autor and Dorn, 2013).

Table A13: Sensitivity to Influential Origin Municipios

	(1) Naturalized	(2) Married	(3) Married to US citizen	(4) Married to US-born	(5) Married to Mexican	(6) Married to Naturalized Mexican
Excluding Top 5 Municipios	0.017***	0.031**	0.026***	0.012**	0.013	0.014***
	(0.006)	(0.013)	(0.007)	(0.006)	(0.013)	(0.003)
Excluding Top 10 Municipios	0.016**	0.029**	0.025***	0.011**	0.012	0.015***
	(0.006)	(0.013)	(0.007)	(0.005)	(0.013)	(0.004)
Excluding Top Decile	0.018**	0.036**	0.029***	0.014*	0.014	0.016***
	(0.008)	(0.015)	(0.009)	(0.007)	(0.018)	(0.005)

Standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: This table presents 2SLS estimates of the effect of the homicide shock on the main outcomes, sequentially excluding the most influential DTO municipios. Influential municipios are defined as those with the highest total network weights across US commuting zones. Each row excludes a different set: the top 5, top 10, or top decile of influential municipios. Both the homicide shock and the instrument are normalized to have mean zero and unit variance. All specifications include controls for age, sex, educational attainment, immigration enforcement, and Bartik-style measures of labor demand, as well as commuting zone, year, and years since migration fixed effects. Standard errors are clustered at the commuting zone level. The sample is restricted to working-age non-institutionalized Mexican-born individuals who migrated between 2000 and 2006, in balanced commuting zones with Mexican population above the 50th percentile.

Table A14: Robustness Checks II - Falsification Test

	(1) Naturalized	(2) Married	(3) Married to US citizen	(4) Married to US-born	(5) Married to Mexican	(6) Married to Naturalized Mexican
Homicide Shock	0.006	0.052	0.021	0.010	0.015**	0.002
	(0.013)	(0.033)	(0.013)	(0.009)	(0.006)	(0.004)
Observations	33742	33742	31284	31284	31284	31284
Mean Y - Baseline	0.039	0.382	0.069	0.036	0.016	0.003
Mean Y - Overall	0.059	0.400	0.086	0.038	0.027	0.004
Mean HS	19.71	19.71	19.82	19.82	19.82	19.82
S.D. HS	7.54	7.54	7.58	7.58	7.58	7.58

Standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: This table presents the 2SLS estimates of the effect of the homicide shock on a sample of working-age non-institutionalized Central Americans who migrated between 2000 and 2006. Both the shock and the instrument are standardized. The analysis includes the same controls as in the main specification. Standard errors are clustered at the commuting zone level.

Table A15: Robustness Checks III - Sample Sensitivity

	(1) Naturalized	(2) Married	(3) Married to US citizen	(4) Married to US-born	(5) Married to Mexican	(6) Married to Naturalized Mexican
Panel A: Unbalanced & No population cutoff						
Homicide Shock	0.015**	0.028**	0.023***	0.010*	0.012	0.013***
	(0.007)	(0.014)	(0.007)	(0.006)	(0.014)	(0.004)
Observations	153030	153030	143822	143822	143822	143822
Mean Y - Baseline	0.039	0.516	0.087	0.048	0.404	0.035
Mean Y - Overall	0.052	0.523	0.108	0.058	0.415	0.044
Mean HS	21.89	21.89	22.06	22.06	22.06	22.06
S.D. HS	12.09	12.09	12.18	12.18	12.18	12.18
Panel B: Unbalanced & 25th percentile population cutoff						
Homicide Shock	0.0163**	0.0293**	0.0238***	0.0110*	0.0123	0.0138***
	(0.007)	(0.014)	(0.007)	(0.006)	(0.014)	(0.004)
Observations	151264	151264	142144	142144	142144	142144
Mean Y - Baseline	0.039	0.516	0.087	0.047	0.405	0.035
Mean Y - Overall	0.0522	0.522	0.108	0.0579	0.415	0.0436
Mean HS	21.89	21.89	22.06	22.06	22.06	22.06
S.D. HS	12.08	12.08	12.17	12.17	12.17	12.17
Panel C: Unbalanced & 50th percentile population cutoff						
Homicide Shock	0.0167**	0.0294**	0.0255***	0.0120**	0.0119	0.0144***
	(0.007)	(0.014)	(0.007)	(0.006)	(0.014)	(0.004)
Observations	141909	141909	133421	133421	133421	133421
Mean Y - Baseline	0.039	0.515	0.086	0.046	0.405	0.035
Mean Y - Overall	0.0519	0.522	0.108	0.0575	0.415	0.0436
Mean HS	21.92	21.92	22.09	22.09	22.09	22.09
S.D. HS	12.08	12.08	12.17	12.17	12.17	12.17
Panel D: Unbalanced & 75th percentile population cutoff						
Homicide Shock	0.0166**	0.0278**	0.0230***	0.00998*	0.0126	0.0138***
	(0.007)	(0.014)	(0.007)	(0.005)	(0.014)	(0.004)
Observations	125129	125129	117778	117778	117778	117778
Mean Y - Baseline	0.037	0.514	0.084	0.046	0.404	0.034
Mean Y - Overall	0.0511	0.521	0.107	0.0567	0.416	0.0435
Mean HS	22.04	22.04	22.21	22.21	22.21	22.21
S.D. HS	12.11	12.11	12.20	12.20	12.20	12.20
Panel E: Balanced & 25th percentile population cutoff						
Homicide Shock	0.0167**	0.0278**	0.0237***	0.00973*	0.0117	0.0145***
	(0.007)	(0.014)	(0.007)	(0.006)	(0.014)	(0.004)
Observations	149443	149443	140463	140463	140463	140463
Mean Y - Baseline	0.039	0.516	0.087	0.047	0.405	0.035
Mean Y - Overall	0.0520	0.522	0.108	0.0576	0.415	0.0436
Mean HS	21.91	21.91	22.07	22.07	22.07	22.07
S.D. HS	12.09	12.09	12.18	12.18	12.18	12.18
Panel F: Balanced & 75th percentile population cutoff						
Homicide Shock	0.017**	0.028**	0.023***	0.010*	0.013	0.014***
	(0.007)	(0.014)	(0.007)	(0.005)	(0.014)	(0.004)
Observations	125129	125129	117778	117778	117778	117778
Mean Y - Baseline	0.037	0.514	0.084	0.046	0.404	0.034
Mean Y - Overall	0.051	0.521	0.107	0.057	0.416	0.044
Mean HS	22.04	22.04	22.21	22.21	22.21	22.21
S.D. HS	12.11	12.11	12.20	12.20	12.20	12.20

Standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: This table presents the 2SLS estimates of the effect of the homicide shock on the main outcomes across different sample selections. Both the HS and the instrument are standardized. In all specifications, controls include age, sex, educational attainment, measures for immigration enforcement, and Bartik-style measures of labor demand. Fixed effects for commuting zone, year, and years since migration are included, with standard errors clustered at the commuting zone level. The baseline mean represents the outcomes' means in 2006. The sample in all panels is restricted to working-age non-institutionalized Mexicans who migrated between 2000 and 2006. Panel A imposes no commuting zone restrictions. Panels B, C, and D report results for the 25th, 50th, and 75th percentile population cutoffs without requiring balanced commuting zones. Panels E and F apply the 25th and 75th percentile cutoffs while ensuring balanced commuting zones.

Table A16: Effect of Violence on Return Migration using the Mexican Census

	(1) OLS	(2) 2SLS
Homicide Rate	0.000	-0.247
	(0.003)	(0.163)
Observations	10402	10402
Mean Y - Baseline	0.019	0.019
Mean Y - Overall	0.051	0.051
Mean HR	15.31	15.31
S.D. HR	27.16	27.16
Municipio FE	Y	Y
Year FE	Y	Y

Standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: This table presents the OLS (Column 1) and 2SLS estimates (Column 2) of the effect of the homicide rate on return migration flows at the Mexican municipio-year level. The endogenous variable is the municipio's homicide rate, and the instrument is the interaction of the DTO indicator and the cocaine supply shock. Both are normalized. In both Columns, the outcome is the number of migrants who returned from the US to a Mexican municipio divided by the 2005 population of the municipio (multiplied by 100). Municipio and year fixed effects are added, and the standard errors are clustered at the municipio level in all regressions. Regressions are weighted by the municipio's 2005 population. The baseline mean represents the outcomes' means in 2006.

Table A17: Effect of Violence on Family Reunification

	(1) Total	(2) Any Member Joined	(3) Spouse Joined	(4) Relatives Joined	(5) Non-Relatives
Homicide Shock	-0.085***	-0.059***	-0.004	-0.035***	-0.029***
	(0.031)	(0.021)	(0.004)	(0.012)	(0.011)
Observations	45113	45113	45113	45113	45113
Mean Y - Baseline	0.000	0.000	0.000	0.000	0.000
Mean Y - Overall	0.133	0.094	0.015	0.059	0.029
Mean HS	23.22	23.22	23.22	23.22	23.22
S.D. HS	13.67	13.67	13.67	13.67	13.67

Standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: This table presents the 2SLS estimates of the effect of the homicide shock on family reunification. The outcome of Column (1) is the total number of Mexicans joining households after 2006. Outcomes of Columns (2)-(5) are indicator variables for whether any member, a spouse, or relatives joined households after 2006, respectively. Both the HS and the instrument are normalized to have mean zero and unit variance. In all specifications, controls include age, sex, educational attainment, measures for immigration enforcement, and Bartik-style measures of labor demand. Additionally, I include commuting zone, year, and years since migration fixed effects and cluster the standard errors at the commuting zone level. The analysis is conducted at the household-level. The sample is restricted to working-age non-institutionalized Mexican-born individuals who migrated between 2000 and 2006, in balanced commuting zones with Mexican population above the 50th percentile. The baseline mean represents the outcomes' means in 2006.

B Supplementary Analysis

B.1 Quality of MCAS Data

In this section, I provide additional results that validate the Matrícula data, comparing MCAS with the American Community Survey (ACS), and drawing on existing validation work. The ACS is representative of both documented and undocumented migrants, making it a useful benchmark for assessing the coverage of MCAS.

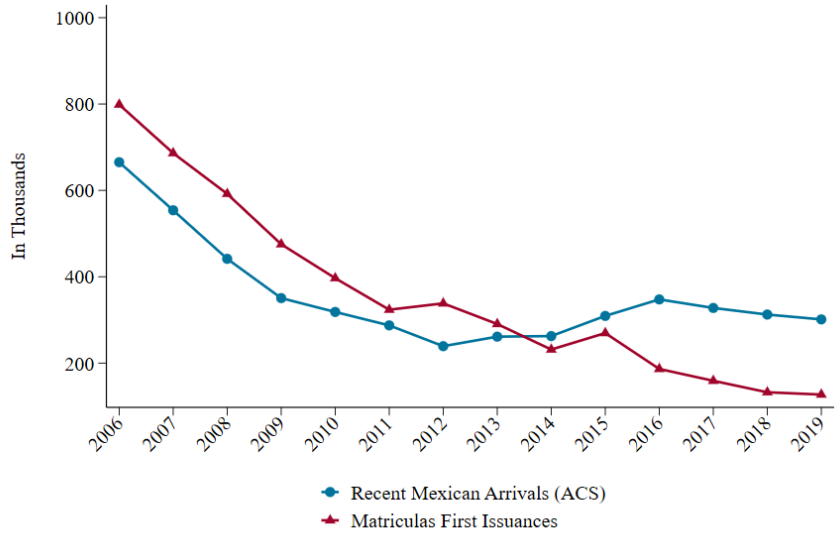
In Figure B1, I plot the yearly trend in first issuance Matrícula cards (in red) and recent Mexican arrivals obtained through the ACS (in blue). Between 2006 and 2012, the two trends track each other closely within a margin of 200,000 individuals. This gives confidence that the MCAS data capture broad inflows of Mexican migrants during my study period. The divergence after 2012 is consistent with stricter immigration enforcement and a decline in Mexican undocumented inflows, but this does not affect my analysis, which is restricted to 2006-2012.

Next, I demonstrate that the MCAS accurately represents the distribution of migrants across US destinations (Figure B2 and Figure B3). These scatter plots correlate the log share of Matrícula issuances in 2006-2007 (2007-2011) with the log share of Mexican residents in the ACS between 2006-2007 (2011-2012) at the commuting zone and state levels, respectively. In panels (b), I aggregate MCAS issuances over 2007-2011 because cards issued during this period represent migrant flows that should appear as part of the migrant stock observed in the 2011-2012 ACS. The data aligns closely with the 45-degree line, with R-squared values between 0.80 and 0.99. This indicates that MCAS reliably captures the relative size and geographic pattern of Mexican migrant groups across destinations. These figures follow Figure 1 of Caballero et al. (2018) but for a subsequent time period.

Caballero et al. (2018) further show that the MCAS also aligns well on the Mexico side: comparing MCAS with the Mexican Census, they find strong correlations in the municipio of origin distribution. Their study highlights that different municipios within the same state send migrants to distinct US destinations, which the MCAS captures accurately.

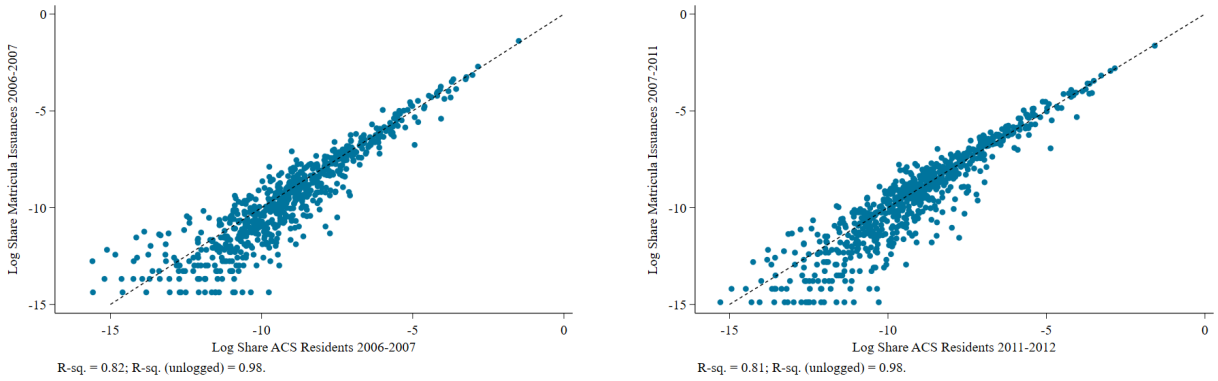
Taken together, this evidence suggests that MCAS provides a reliable picture of migrant networks. While coverage is particularly high among undocumented migrants, this does not appear to bias the overall geographic pattern of migration flows.

Figure B1: Annual Number of Mexican Arrivals, MCAS vs. ACS



Notes: This figure displays the annual number of recent Mexican arrivals. The blue line displays the yearly total number of Mexican migrants who have been in the US for less than a year, obtained from the American Community Survey. The red line displays the yearly first Matrícula issuances.

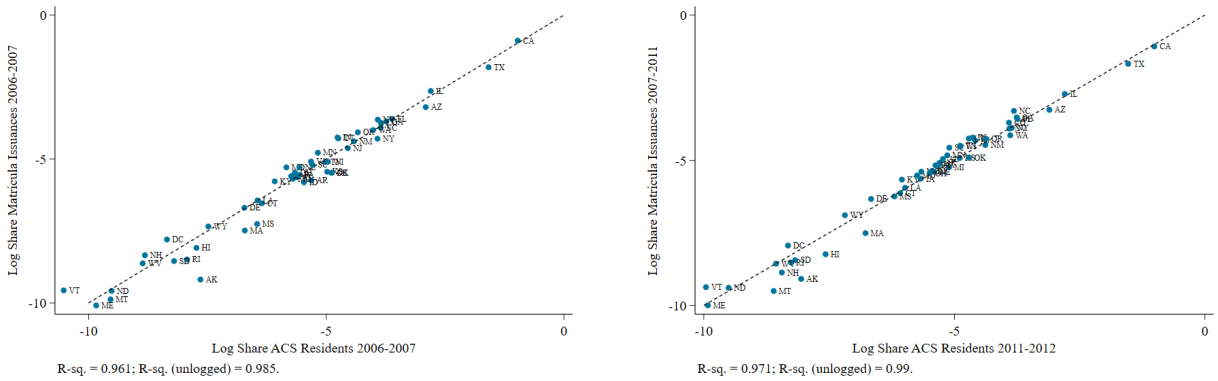
Figure B2: Distribution of Mexican Migrants across US Commuting Zones: MCAS vs. ACS



(a) (b)

Notes: This figure compares the distribution of Mexican-born migrants across US commuting zones (CZs) using two data sources: the American Community Survey (ACS) and the Matrícula Consular (MCAS). Panel (a) plots ACS data from 2006-2007 against MCAS cards issued in the same years. Panel (b) plots ACS data from 2011-2012 against MCAS cards issued between 2007-2011. MCAS counts include both first issuances and renewals. The 45-degree line indicates perfect agreement between the datasets. The R-squared corresponds to the specification shown in the figure, while the "unlogged" version applies to a comparison of raw unlogged shares.

Figure B3: Distribution of Mexican Migrants across US States: MCAS vs. ACS



(a) (b)

Notes: This figure compares the distribution of Mexican-born migrants across US states using two data sources: the American Community Survey (ACS) and the Matrícula Consular (MCAS). Panel (a) plots ACS data from 2006-2007 against MCAS cards issued in the same years. Panel (b) plots ACS data from 2011-2012 against MCAS cards issued between 2007-2011. MCAS counts include both first issuances and renewals. The 45-degree line indicates perfect agreement between the datasets. The R-squared corresponds to the specification shown in the figure, while the "unlogged" version applies to a comparison of raw unlogged shares.

B.2 Effect of DTO Presence and Cocaine Shocks on Violence in Mexico

In this section, I show that the presence of a DTO and the Colombian cocaine supply shock are both important determinants of violence in Mexico. Specifically, I estimate the following model:

$$HR_{mt} = \alpha + \beta DTO_{m,2004-2006} \times Col_t^{Cocaine} + \alpha_m + \alpha_t + \epsilon_{mt} \tag{B1}$$

where HR_{mt} is the homicide rate of municipio m in year t, such that t $\in$ [2006, 2012]. $\text{DTO}_{m,2004-2006}$ is an indicator of DTO presence between 2004 and 2006, and $\text{Col}_t^{Cocaine}$ is the cocaine supply shock. In my preferred specification, I add municipio fixed effects, α_m, and year fixed effects, α_t, but I show the results while adding these gradually. The standard errors are clustered at the municipio level. Both the interaction and the homicide rate are normalized to have a mean of zero and a standard deviation of one.

I present the results in Table B1. The coefficients range between 0.12 and 0.26 and are statistically significant at the 1 percent level. In the preferred specification (Column 4), a one standard deviation increase in the interaction term is associated with a 0.175 standard deviation increase in the homicide rate. The F-statistic lies between 32.4 and 77.25. Overall, the presence of a DTO in a municipio interacted with the cocaine shock has a strong predictive power of the municipio's homicide rate across all specifications.

Finally, a concern with the IV is that the intensity of Colombian cocaine seizures is correlated with changes in conditions in Mexico or is a result of cooperation with Mexican forces. Two facts alleviate this concern. First, Figure 5 shows that attempts to seize cocaine in Colombia existed before the Mexican war on drugs, but they were not as successful as in the period post-2007. Second, Castillo et al. (2020) argue that cocaine seizures in Colombia are driven by politics and funding, with success largely depending on chance. They find no correlation with Mexico's seizure rate, ensuring a lack of cooperation between the two countries at the time.Specifically, Castillo et al. (2020) estimate the relationship between cocaine seizures and other anti-drug policies in Colombia, such as seizures of chemical precursors and destruction of cocaine labs. They find that the different policies are not correlated and do not move together, indicating that seizures do not capture a change in cocaine production and demand that originate in Mexico. Therefore, the spike in violence due to the cocaine supply shock is plausibly exogenous to socioeconomic factors in Mexico.

Table B1: Effect of DTO Presence and Cocaine Shocks on Violence in Mexico

	(1)	(2)	(3)	(4)
$DTO_{m,2004-2006} * Col_t^{Cocaine}$	0.121***	0.260***	0.114***	0.175***
	(0.017)	(0.030)	(0.017)	(0.031)
Observations	17087	17087	17087	17087
R-sq	0.0148	0.3394	0.0266	0.3498
F-excl. instrument	48.983	77.256	43.059	32.409
Mean HR	18.102	18.102	18.102	18.102
S.D. HR	51.615	51.615	51.615	51.615
Mean IV	0.210	0.210	0.210	0.210
S.D. IV	0.526	0.526	0.526	0.526
Municipio FE	N	Y	N	Y
Year FE	N	N	Y	Y

Standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: This table presents the first stage results using OLS estimation. The dependent variable is the homicide rate (HR) per 100,000 persons for a municipio m in year t. The independent variable (IV) is an indicator for DTO presence in municipio m between 2004 and 2006 interacted with the cocaine supply shock (equation B1). Both the dependent and the independent variable are normalized to have mean zero and unit variance. The standard errors are clustered at the municipio-level in all specifications.

B.3 Effect on Drug Violence in the US

To assess the effect of the homicide shock on drug violence in the US, I use data from the Uniform Crime Reporting Program on drug arrests. These arrests pertain to offenses related to drug possession and drug sales of substances such as cannabis, heroin, other drugs, or synthetic narcotics. The data are reported by police agencies across the US and collected by the FBI at the monthly level.

There are a few issues with using county-level data, primarily because a police agency could operate in multiple counties. However, this problem does not apply to my study, as commuting zones span multiple counties, and there are no cases where an agency operates in multiple commuting zones. Another challenge is that not all agencies report data consistently throughout the year. Consequently, I perform the analysis using a balanced sample of commuting zones, which includes only agencies that report data for every month of every year, and an unbalanced sample, which includes all available data. I include commuting zone and year fixed effects, weight the estimates by the commuting zone population in 2006, and cluster the standard errors at the commuting zone level. Table B2 below presents the OLS and 2SLS results for the balanced sample (panel A) and the unbalanced sample (panel B).

Table B2: Effect of the Homicide Shock on Drug Arrests in the US

	OLS			2SLS		
	(1)	(2)	(3)	(4)	(5)	(6)
	Drug Arrests	Drug Sales Arrests	Drug Possession Arrests	Drug Arrests	Drug Sales Arrests	Drug Possession Arrests
Panel A: Balanced Sample						
Homicide Shock	-492	-19	-476	-6512	-626	-5873
	(634.5)	(82.4)	(557.8)	(5754.6)	(781.9)	(4988.8)
Observations	1582	1582	1582	1582	1582	1582
Mean Y - Baseline	19,345	3,374	15,943	19,345	3,374	15,943
Mean Y - Overall	16601	2950	13626	16601	2950	13626
Panel B: Unbalanced Sample						
Homicide Shock	-9079	-790	-7272	-9079	-790	-7272
	(6616.3)	(876.5)	(5737.9)	(6616.3)	(876.5)	(5737.9)
Observations	2415	2415	2415	2415	2415	2415
Mean Y - Baseline	22,380	3,535	16,943	22,380	3,535	16,943
Mean Y - Overall	19454	3149	14800	19454	3149	14800
Mean HS	21.84	21.84	21.84	21.84	21.84	21.84
S.D. HS	13.98	13.98	13.98	13.98	13.98	13.98
CZ FE	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y

Standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: This table presents the OLS and 2SLS estimates of the effect of the homicide shock on the total number of drug arrests in the US (Columns 1 and 4), obtained from the Uniform Crime Reporting Program (Kaplan, 2021). The latter includes arrests for drug sales (Columns 2 and 5) and drug possession (Columns 3 and 6). Both the HS and the instrument are normalized to have mean zero and unit variance. I include commuting zone and year fixed effects, weight the estimates by the commuting zone population in 2006, and cluster the standard errors at the commuting zone level in all regressions. In Panel A, the sample of commuting zones is balanced, including data from agencies that report every month of every year between 2006 and 2012. Panel B includes an unbalanced panel of commuting zones. The baseline mean represents the outcomes' means in 2006.

B.4 Effect on Marriage

In my paper, the marriage to US citizens is a stock measure, that could increase through different channels: either increase in new intermarriage to US citizens, increase in the share of naturalization among existing marriages, or an increase in the stability of marriages. As I find increases in marriage incidence, I cannot condition on marriage to examine changes in type of spouse. Instead, I rely on the questions in the ACS that identify the year of marriage and naturalization, which were only added after 2008. Consequently, this analysis has a much smaller sample size, almost by 32%.

Table B3 reports the effects of the homicide shock on the various channels that could increase marriage to US citizens. In Column (1), I look at the effect of the homicide shock on recent marriages to US citizens, which suggests increases in new marriages. I find that the homicide shock leads to an increase in new marriages to US citizens and to naturalized Mexican-born individuals (Column 2). To check whether there are increases in the share of US citizens among existing marriages, I then define an outcome that takes the value one if the individual was naturalized and married but have naturalized after marriage (Column 3), the results show a slight decrease in this measure. The estimates as well as the baseline means presented in Columns (1)-(3) are quite small in magnitude due to the data limitations. Finally, I find a very slight increase in divorce rates (Column 5). While I cannot directly examine whether this affected those who were married to US citizens, it suggests a slight decrease in marriage stability.

Table B3: Effect of the Homicide Shock on the Stock of Marriages to US Citizens

	(1) Newly Married to US citizen	(2) Newly Married to Naturalized Mexican	(3) Naturalized after marriage	(4) Naturalized and Married to US citizen	(5) Divorced
Homicide Shock	0.001	0.002	-0.001	0.011***	0.002
	(0.003)	(0.001)	(0.004)	(0.004)	(0.004)
Observations	96803	96803	102097	132832	141270
Mean Y - Baseline	0.008	0.002	0.016	0.014	0.023
Mean Y - Overall	0.009	0.002	0.023	0.020	0.027
Mean HS	25.87	25.87	25.77	22.10	21.93
S.D. HS	12.36	12.36	12.30	12.18	12.08

Standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: This table presents the 2SLS estimates of the effect of the homicide shock on the channels through which the stock of marriages to US citizens could increase. All the outcomes are dummy variables. Both the HS and the instrument are normalized to have mean zero and unit variance. In all specifications, controls include age, sex, educational attainment, measures for immigration enforcement, and Bartik-style measures of labor demand. Additionally, I include commuting zone, year, and years since migration fixed effects and cluster the standard errors at the commuting zone level. The sample is restricted to working-age non-institutionalized Mexican-born individuals who migrated between 2000 and 2006, in balanced commuting zones with Mexican population above the 50th percentile. In Columns (1)-(3), the sample only includes years 2008-2012. The baseline mean represents the outcomes' means in 2006.

Table B4: Effect of the Homicide Shock on Marriage Markets

	(1) New Mexican Married Arrivals	(2) New Mexican Married Arrivals Rate	(3) New Mexican Single Arrivals	(4) New Mexican Single Arrivals Rate	(5) Sex Ratio Among New Arrivals
Homicide Shock	-2175.736	-0.005	-2427.323	-0.003	-0.588
	(2048.286)	(0.004)	(2418.377)	(0.002)	(1.369)
Observations	2415	2415	2415	2415	1232
Mean Y - Baseline	665.813	0.006	719.075	0.007	2.836
Mean Y - Overall	5358.401	0.008	6163.489	0.008	2.336
Mean HS	21.84	21.84	21.84	21.84	21.54
S.D. HS	13.98	13.98	13.98	13.98	14.71

Standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: This table presents the 2SLS estimates of the effect of the homicide shock on three outcomes: New Mexican Married Arrivals, New Mexican Single Arrivals, and the Sex Ratio Among New Arrivals. "New Arrivals" are defined as individuals who have been in the US for less than one year. Columns (2) and (4) scale arrivals by the commuting zone's 2005 population and multiply by 100. Both the homicide shock and the instrument are normalized to have mean zero and unit variance. All specifications include controls for immigration enforcement and Bartik-style labor demand measures, as well as commuting zone and year fixed effects. Standard errors are clustered at the commuting zone level. Regressions are weighted by the commuting zone's 2006 Mexican population. The analysis is restricted to a balanced sample of commuting zones with a Mexican population above the 50th percentile. The baseline mean represents the average value of each outcome in 2006.

B.5 Effect on Cohabitation

One question is if the increase in marriage is driven by shifts from cohabitation to marriages, or whether there is an increase in cohabitation at the same time. An increase in the latter would reflect a desire to establish roots and social networks in the US, although it does not carry substantial legal benefits. In Table B5, the 2SLS effects of the homicide shock on cohabitation are presented. All of the outcomes are dummy variables. The results suggest a decrease in cohabitation, especially with other Mexicans. This might imply a transition from cohabitation to marriage. However, it is not possible to ascertain whether individuals who are entering into marriage were previously engaged in a cohabiting arrangement.

Table B5: Effect of the Homicide Shock on Cohabitation Patterns

	(1) Cohabitation	(2) W. US citizen	(3) W. US-born	(4) W. Mexican	(5) W. Naturalized Mexican
Homicide Shock	-0.022**	0.002	0.000	-0.022**	-0.000
	(0.010)	(0.002)	(0.002)	(0.009)	(0.001)
Observations	141270	141270	141270	141270	141270
Mean Y - Baseline	0.060	0.009	0.005	0.051	0.003
Mean Y - Overall	0.086	0.013	0.009	0.072	0.003
Mean HS	21.93	21.93	21.93	21.93	21.93
S.D. HS	12.08	12.08	12.08	12.08	12.08

Standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: This table presents the 2SLS estimates of the effect of the homicide shock on cohabitation patterns. All the outcomes are dummy variables. Both the HS and the instrument are normalized to have mean zero and unit variance. In all specifications, controls include age, sex, educational attainment, measures for immigration enforcement, and Bartik-style measures of labor demand. Additionally, I include commuting zone, year, and years since migration fixed effects and cluster the standard errors at the commuting zone level. The sample is restricted to working-age non-institutionalized Mexican-born individuals who migrated between 2000 and 2006, in balanced commuting zones with Mexican population above the 50th percentile. The baseline mean represents the outcomes' means in 2006.

B.6 Effect on International Migration

This section examines the effects of heightened violence in Mexico on international migration. Table B6 reports the 2SLS estimates. Column (1) measures the number of working-age Mexican migrants who arrived in the US within the past year at the commuting zone–year level. Column (2) expresses these arrivals as a share of the commuting zone's 2005 population (multiplied by 100). Column (3) considers the size of the focal cohort used in the main analysis, measured in logs, as a proxy for return migration. Column (4) uses Mexican Census data to compute emigration flows from municipios to the US as a share of the municipio's 2005 population.

The results suggest that overall inflows from Mexico to the US do not significantly increase in response to violence. Immigration rates decline (Column 2), while the focal cohort expands (Column 3), consistent with reduced return migration. Finally, emigration flows from Mexico to the US decrease slightly (Column 4), though the effect is not statistically significant.

In Table B7, I examine whether the composition of the newly arrived migrants is changing due to violence. I find no discernible effects.

Table B6: Effect of Violence on International Migration

	(1) New Arrivals	(2) Immigration Rate	(3) Log Focal Cohort	(4) Emigration Rate
Homicide Shock	-8181.978	-0.008**	0.222*	
	(6246.050)	(0.003)	(0.122)	
Homicide Rate				-0.127
				(0.095)
Observations	2415	2415	2415	10402
Mean Y - Baseline	9,168.524	0.015	9.265	0.098
Mean Y - Overall	4857.636	0.009	9.292	0.105
Mean HS / HR	19.67	19.67	19.67	15.31
S.D. HS / HR	9.59	9.59	9.59	27.16
CZ / Municipio FE	Y	Y	Y	Y
Year FE	Y	Y	Y	Y

Standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: This table reports 2SLS estimates of the effect of the homicide shock on Mexican migration to the US. Column (1) measures new arrivals at the commuting zone–year level (ACS). Column (2) expresses new arrivals as a percentage of the commuting zone's 2005 population. Column (3) measures the annual size of the focal cohort from the main analysis in logarithms (ACS). Column (4) measures emigration from Mexican municipios to the US as a percentage of the municipio's 2005 population (Mexican Census). In Columns (1) and (2),both the homicide shock and instrument are standardized; regressions include commuting zone and year fixed effects, controls for immigration enforcement and Bartik-style labor demand, and are weighted by 2006 total commuting zone population. Standard errors clustered at the CZ level. The sample is restricted to commuting zones above the 50th percentile in Mexican population. In Column (3), the municipio's homicide rate is instrumented by the DTO indicator interacted with the cocaine supply shock (both standardized); regressions include municipio and year fixed effects and are weighted by 2005 municipio population with standard errors clustered at the municipio level. The baseline mean refers to outcome means in 2006.

Table B7: Effect of Violence on the Composition of New Migrants

	(1) Age	(2) Male	(3) Less than HS Degree	(4) HS Degree	(5) Some Dollege	(6) College Degree
Homicide Shock	0.359	0.019	-0.050	0.037	0.008	0.005
	(0.583)	(0.032)	(0.048)	(0.044)	(0.023)	(0.026)
Observations	14986	14986	14986	14986	14986	14986
Mean Y - Baseline	29.436	0.628	0.603	0.254	0.068	0.075
Mean Y - Overall	30.958	0.629	0.571	0.261	0.086	0.082
Mean HS	20.90	20.90	20.90	20.90	20.90	20.90
S.D. HS	15.23	15.23	15.23	15.23	15.23	15.23
CZ FE	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y

Standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: This table presents the 2SLS estimates of the effect of the homicide shock on the observable characteristics of newly arrived migrants. Both the HS and the instrument are standardized. In all specifications, I control for measures of immigration enforcement and Bartik-style measures of labor demand. Additionally, I include commuting zone, year, and years since migration fixed effects and cluster the standard errors at the commuting zone level. The sample is restricted to working-age non-institutionalized Mexicans who migrated in the past year, and to a balanced sample of commuting zones that have a Mexican population higher than the 50th percentile. The baseline mean represents the outcomes' means in 2006.

C Data Appendix

In this section, I provide additional information on the datasets, variables, and data sources used in the analysis.

American Community Survey In the analysis using ACS data, I consider an individual to be US-born if they are born in US or any of the US outlying areas and territories (Guam, US Virgin Islands, Northern Marianas, and Commonwealth of Puerto Rico). A foreign-born individual is considered naturalized if they report that they are citizens through naturalization (using the *citizen* variable). That specifically means that the foreign-born individual has completed the naturalization process and is currently a US citizen. Accordingly, non-US citizens still include individuals who are legal permanent residents, green card holders, other non-naturalized immigrants, visitors to the US, undocumented immigrants, or immigrants on temporary visas. The ACS does not ask about the individuals' legal status, and thus I cannot differentiate between these groups.

Marriage is identified through the *marst* variable. An individual is considered married if they are married and the spouse is either present or absent. The presence of the spouse is identified by IPUMS through *sploc*, which identifies the spouse's location in the household. The spouse is considered present if they are reported as a member of the household, even if they may have been temporarily absent due to vacation, business, or hospitalization at the time of the enumeration. The spouse is considered absent if they do not live in the same household, or have another residence at a considerable distance from home due to employment or for any reason other than separation. In order to observe the characteristics of the spouse, the latter should be present in the household. Marriage to a US citizen is a dummy variable equal to one if the individual marries a US citizen (either a US-born native or a naturalized foreign-born individual) and zero if the individual is married to a non-citizen or remains single.

The poor English Proficiency measure indicates that the individual either does not speak English or does so but not proficiently.

Unfortunately, the ACS lacks data on remittances and savings. Additionally, the year of naturalization or marriage is only available in the ACS from 2008 onward, so tracking individuals' behavior after naturalization or marriage is limited.

Mexican Census (2010) To elaborate on the return intentions mechanism, I leverage publicly available individual-level data from the 2010 Mexican Census, obtained via IPUMS International (Minnesota Population Center, 2020). This dataset, with its migration supplement, provide information on the migration patterns of Mexicans. Since the data are representative at the municipio-level, I use them to compute return migration flows.

The survey asks respondents about their country of residence five years prior to the Census year and records their year of return to Mexico. I calculate the return migration rate as the number of working-age return migrants from the US to each Mexican municipio divided by the municipio's population in 2005. It is important to note that this measure misses people who moved to the US and returned to Mexico within the five years period. Unfortunately, the 2015 Mexican Census does not include a migration supplement that allows observing which year an individual returned to Mexico. Consequently, my analysis of Mexicans' migratory behavior using the Mexican Census is limited to data available from 2006 to 2010, covering 2,259 municipios (92 percent of total).

I also compute emigration flows using the Mexican Census data for Column 4 in Table B6. To compute emigration flows from the Mexican municipio to the US, I rely on the question that asks respondents whether anyone in their household moved to the US during the last five years. The data then record the number of people who left the household to the US, along with information on the time of migration. Using this information, I calculate the emigration rate at the municipio-year level as the total number of working-age individuals who migrated from the municipio divided by the municipio's 2005 population (multiplies by 100). This measure provides a lower bound on the actual emigration rate, since it does not capture migration of the whole household, and it relies on the recollection of family members who stayed in Mexico.

Immigration Enforcement Control Variables Finally, to control for immigration enforcement in the analysis, I use data on enforcement policies from East et al. (2023). These policies include Secure Communities, E-verify, and 287(g).