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

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Abstract

This paper studies how violence due to the war on drugs in Mexico affects the social and economic integration of Mexican migrants in the United States. I combine detailed administrative data on Mexican migrants' municipal origins with US Census data on their naturalization, intermarriage, and economic behavior. To instrument for violence in Mexican municipalities, I exploit the pre-war geographic distribution of drug trade organizations within Mexico together with time variation in cocaine supply shocks originating in Colombia. Focusing on migrants who arrived in the US before the war on drugs, I find that ongoing heightened violence significantly increases their propensity to naturalize and marry US citizens – particularly naturalized Mexicans. The marriage effects are larger for recent and less educated migrants. However, I find no evidence of significant changes in adult labor market behavior or human capital accumulation. Instead, I find increased educational investment in their children, especially those born in Mexico. Taken together, the results point to a decline in return intentions and a broader effort to establish permanence in the US.

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

JEL codes: J15, J61, J12, K42

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1 Introduction

The question of whether migrants fully integrate into host societies – economically and culturally – remains central to public debate in advanced economies, including the United States, especially as inflows increasingly originate from poorer regions with distinct labor market and cultural norms. While much attention has focused on how destination-country policies and characteristics shape integration, little is known about the role of local *home country* conditions. These conditions are likely to be relevant, as they can influence migrants' intended duration of stay in the destination, consequently affecting their incentives to invest in destination-specific skills and behaviors (Adda et al., 2022; Dustmann, 1993, 1999). With ongoing conflicts, economic crises, and natural disasters affecting many sending countries (IMF, 2020), understanding the impact of home country conditions is increasingly important.

This paper studies how violence in migrant's municipalities of origin affects their integration at the destination. Violence can change integration incentives in several ways. Greater insecurity raises remittance needs, pushing migrants to increase labor supply and productivity. At the same time, the psychological burden can hinder economic integration and social engagement. On the other hand, rising violence may reduce the appeal of return migration, encouraging migrants to settle more permanently and invest in the host society (Bleakley and Chin, 2004, 2010; Foged et al., 2022; Foged and Van der Werf, 2023). Motivated by these channels, I explore multiple dimensions of integration, including employment, human capital accumulation, naturalization, and intermarriage – with the latter two serving as proxies for civil and cultural integration, respectively.

To answer the question, I focus on Mexican migrants in the United States.[1] They represent the largest migrant group in the US, and despite high employment rates, they exhibit lower wages and persistently low naturalization and intermarriage rates, raising questions about their integration (Peri and Rutledge, 2021; Gonzalez-Barrera, 2017; Ordway, 2017). Additionally, Mexico has experienced a sharp increase in violence since 2006, following President Felipe Calderón's unexpected war against drug cartels. The homicide rate rose by 150 percent between 2007 and 2012, with substantial variation across municipalities. This context allows me to analyze how a large migrant group responds to intense and localized home-country shocks.

The challenge in studying how home country conditions affect migrants at the destination is the lack of subnational origin data. Most datasets record only country-of-origin and destination, making it difficult to identify the specific regions where migrants maintain close ties. This limitation generally restricts researchers to leverage cross-country variations in home country conditions. I overcome this by using administrative data from the Matrícula Consular de Alta Seguridad

[1] Throughout the paper, I use "Mexicans," "Mexican migrants," and "Mexican-born individuals" interchangeably. I also refer to Mexican source regions as Mexican municipios (e.g., municipalities of origin), which are similar to US counties.

(MCAS) ID cards program, which provide detailed information on the municipal origins of Mexican migrants by US commuting zone, allowing me to exploit local variations in violence within Mexico, down to the municipal level. Using these data, I construct a continuous annual measure of migrants' exposure in each US commuting zone to violence in their municipios of origin. The latter is a weighted average of the homicide rates in Mexican municipios, where weights are given by the contemporaneous shares of migrants in each commuting zone originating from each respective source municipio.

Two challenges arise in estimating the causal effect of local violence using this measure. First, migrants may have self-selected into migration at different times in response to rising violence. To address this, I focus on Mexicans who migrated to the US between 2000 and 2006, before the onset of the drug war and therefore were not directly exposed. This allows me to examine how violence in Mexico affected the contemporaneous outcomes of migrants who were already in the US when the war began.

Second, the potential endogeneity of local violence to other time-varying factors, such as economic shocks, can introduce omitted variable bias. To account for this, I use an instrumental variable that exploits the pre-war geographic distribution of drug trade organizations (DTOs) across Mexican municipios and exogenous temporal shocks to the Colombian cocaine supply. Municipios with DTO presence prior to the war 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 Mexicans in the US originating from municipios with DTOs were exposed to more violence, especially in years with greater Colombian cocaine seizures. It thus resembles a shift-share design, where a common shock – cocaine seizures – is distributed across commuting zones through cross-sectional variation in the municipal origins of migrants. I provide evidence supporting the instrument's validity and show that it is uncorrelated with pre-existing trends in migrant integration outcomes before the war on drugs. That is, migrants from both DTO and non-DTO municipios were on similar integration trajectories prior to 2006, with event-study estimates confirming parallel pre-trends.

The results show that heightened violence in migrants' municipios of origin increases their propensity to naturalize by 43 percent relative to the 2006 baseline mean, implying improved civil integration. I find a 2.5 percentage point increase in the likelihood of marrying a US citizen, a 29 percent increase relative to the baseline mean. I then examine the nationality of the citizen spouse that migrants are marrying. The results show an increase in marriages to both US-born natives and Mexican-born naturalized citizens. Notably, the estimated coefficient on marriage to Mexican-born naturalized citizens is larger, showing almost a 42 percent increase relative to the

baseline mean. These results are robust to alternative sample choices and are not driven by changes in the characteristics of migrants, or an inflow of eligible spouses. I also show that violence exposure does not predict differential attrition from the sample, ruling out compositional changes as a driver of these results.

On the other hand, I find no evidence that violence affects migrants' employment, hours worked, wages, or human capital accumulation, such as schooling or English proficiency. The 2SLS point estimates are close to zero, and the confidence intervals rule out large effects. These null results may reflect limited scope for adjustment, as the average migrant in the sample is 31 years old and already exhibits a relatively high baseline employment rate of 70 percent. Another possibility is that violence generates offsetting forces – psychological distress may reduce productivity, while financial pressure to support family members back home may increase labor effort – resulting in muted net effects. Despite the absence of effects for adults, I find evidence of increased educational investment in their children, particularly those born in Mexico. Specifically, there is a decline in the dominance of Spanish at home and an improvement in English proficiency, suggesting a broader family-level effort to integrate.

My findings also reveal that the effects of violence vary by migrants' characteristics. The increase in marriages is more evident among recent migrants (0-3 years in the US). In contrast, the increase in naturalization seems to be driven by those who lived in the US for 7-10 years, coinciding with the eligibility window for citizenship following permanent residency. I also find that the effects of violence on marriage to US citizens are larger for migrants with lower levels of education, who typically rely more heavily on family-based routes to secure permanent status. Taken together, these findings suggest that migrants are making destination-specific investments in response to violence in their source regions, though the nature of the investment depends on the opportunities available at a given time. Longer-tenure migrants who meet the criteria for naturalization pursue this path, while shorter-tenure migrants opt for alternative investments that can accelerate their path to naturalization in the future.

Overall, the findings are consistent with a decline in the intentions of migrants to return to their home country as a main mechanism. As violence intensifies in their regions of origin, migrants appear more likely to pursue legal permanence and invest in their lives in the US, as evidenced by increased naturalization and marriages. To further explore this channel, I use 2010 Mexican Census data to estimate the effect of violence within Mexico on return migration flows from the US to Mexico. A limitation of this analysis is that the Mexican Census excludes the years of peak violence (2011-2012). The results suggest that municipios exposed to heightened violence experience a reduction in return migration rates, albeit not significantly.

This paper mainly contributes to the literature on the determinants of migrant integration in host societies. It is among the first to examine how localized, ongoing *home* country violence, which

is increasingly prevalent in the developing world (United Nations, 2023), impacts migrants' social and economic integration at the destination. Only a few studies have examined the effects of home country conditions on migrants, mainly leveraging cross-country variations in macroeconomic factors (Albert and Monras, 2022; Dustmann et al., 2024; Nekoei, 2013).[2]

My setting offers two main advantages. First, I estimate the medium-run effects of ongoing violence on integration outcomes among migrants with a shared cultural and linguistic background. Second, rather than exploiting cross-country variation, my paper exploits variation within Mexico using the Matrícula Consular data in a novel manner.[3] A closely related paper, Bassetto and Monteiro (2024), studies terrorist attacks in migrants' countries of origin and their effects on return intentions and unemployment duration in Germany. Their analysis relies on cross-country variation and focuses on short-run outcomes (within 90 days). In contrast, my strategy provides more precise estimates of localized home conditions, and accounts for the fact that individuals are generally more informed and influenced by conditions in their specific regions of origin than by national aggregate conditions. In this respect, this paper also relates to Aksoy et al. (2024), who show that Syrian refugee students in Türkiye improve academically when violence intensifies in their district of origin.

The paper also engages with the literature on return intentions and migrant behavior. Prior work has distinguished between temporary and permanent migration (Adda et al., 2022; Chiswick and Miller, 1993; Dustmann, 2000; Dustmann and Mestres, 2010; Dustmann and Görlach, 2016). Notably, Cortes (2004) shows that refugees, an extreme case of permanent migration, initially face larger economic disparities than economic migrants in the US, but later experience faster earnings growth due to stronger incentives to invest in language. In contrast, I study a group typically classified as non-refugee economic and temporary migrants, who still respond to localized violence shocks in their municipios of origin. This distinction matters, as integration policies often overlook this group, despite potential benefits once they have decided to remain. I use marriage to US citizens as revealed-preference evidence of permanence, linking to work that views intermarriage both as a signal of settlement and as a pathway to legalization when other options are limited (Adda et al., 2025).

More broadly, the paper adds to the literature on the impacts of violence in Mexico (Brown, 2018; Dell, 2015; Velásquez, 2020), by focusing on cross-border spillovers. Prior work has also

[2]Specifically, these papers look at fluctuations in inflation, exchange rates, and GDP, that affect migrants' reservation wage through relative price changes between origin and destination countries. In this case, it is challenging to isolate the specific aspects of a country (e.g., inflation, GDP) that are directly impacting migrants. Another strand of literature focuses on the impact of home country macroeconomic conditions on mental health and well-being of migrants (Akay et al., 2017; Nguyen and Connelly, 2018; Nguyen and Duncan, 2020).

[3]This approach highlights the international diffusion of shocks from Mexico to migrants in the United States through networks, complementing recent work that uses Matrícula Consular data to study the reverse direction (Caballero, 2022; Caballero et al., 2023; Pearson, 2023; Tian et al., 2022).

examined the effects on emigration from Mexico, often with conflicting results (Basu and Pearlman, 2017; Orozco-Aleman and Gonzalez-Lozano, 2018; Rios, 2014). I instead study its impact on return migration and intentions.

The rest of the paper is organized as follows: Section 2 elaborates on the setting of Mexico and the war on drugs. Section 3 describes the data sources used. In Section 4, I introduce the empirical strategy and argue for the validity of the instrumental variable approach. The results are presented in Section 5, followed by a discussion on their robustness in Section 6. In Section 7, I provide evidence on the mechanisms driving the results. Finally, I conclude in Section 8.

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 migrant groups, despite being primary green card recipients. Several factors contribute to this pattern, including limited English proficiency, proximity to Mexico, time constraints, and application costs (Gonzalez-Barrera, 2017; Rosenbloom and Batalova, 2022). Yet 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). Understanding why naturalization rates remain low, and what factors shape this decision, is therefore central to assessing the long-term integration of Mexicans.

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 – a condition most undocumented migrants meet. Those who do not meet this criteria 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 apply for and 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).

Another factor contributing to low naturalization rates among Mexican migrants 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 figure declined to 30% by 2019 (Campos-Vazquez and Lara, 2012). Many Mexican migrants initially come to the US 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 return migration.

Mexico's Cartel Drug Trade. For decades, Mexico has grappled with drug production and trafficking, as drug trafficking organizations (DTOs) have capitalized on lucrative incentives, 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).

Mexico's War on Drugs. 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 declared war on drug trade organizations unexpectedly. 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.[4] 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

[4]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.

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, which created power vacuums and fueled cartel conflicts (Dell, 2015; Guerrero-Gutiérrez, 2011; Lindo and Padilla-Romo, 2018).[5] 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. A substantial number of them were children under the age of 15.

3 Data

This paper aims to estimate the effects of violence on Mexican migrants in the US, which requires information on violence in Mexico, the source regions of US Mexican migrants, and their integration outcomes. To achieve this, the analysis combines data from five main sources.

[5]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 variations 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.

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 that occurred 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.[6] 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.

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 the 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 a DTO presence in 2004–2006, covering approximately 59 percent of Mexico's population in 2005.

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

Cocaine Seizures in Colombia. In the following sections, I discuss how cocaine seizures in Colombia contributed to the escalation of violence in Mexico. I obtain data on cocaine seized by Colombian forces from 2000 to 2012 from Colombia's Ministry of Justice and Law (Ministry of Justice and Law, 2022). These data comprise the total kilograms (KG) of cocaine seized annually across Colombia. Additionally, I gather data on the annual land area used for coca cultivation in Colombia (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). I construct a normalized measure of cocaine seizures in Colombia as the annual amount of cocaine seized by Colombian forces per unit area of coca cultivated land in the country.

3.2 Migrant Municipal Origins

To identify the source regions of Mexican migrants in the US at the municipal level, I use administrative data available since 2006 from the Matrícula Consular de Alta Seguridad (MCAS) identity cards program. 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 or relocation, and facilitates access to services such as banking, housing, remittances, and, in some states, driver's licenses (Daniele et al., 2023). Notably, the card holds particular appeal for undocumented immigrants who often lack access to other forms of identification (Caballero et al., 2018).

The Consular card records crucial information on migration networks, including each holder's Mexican municipio of birth and county of residence in the US. 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 cards per year.

I map the MCAS data to the Mexican municipio - US commuting zone level. Subsequently, I compute contemporaneous migrant network weights, reflecting the share of migrants from each source municipio m located in a US commuting zone (CZ) j during a given year t. The network measure links Mexican municipios impacted by violence with their network-connected communities in the US. Formally, the network measure is defined as follows:

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

where s_{jmt} is the number of new Matrícula cards issued for migrants from municipio m who

reside in CZ j in year t. S_{jt} is the total number of new cards issued in CZ j for migrants from all municipios, or simply, $\sum_m s_{jmt}$.

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 additional access to services. 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).

3.3 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 survey is a large nationally representative repeated cross-section, that does not selectively sample individuals based on their legal status. The smallest geographic identifier in the data is the Public Use Microdata Area (PUMA). I map each individual's PUMA to their commuting zone (CZ) (Autor and Dorn, 2013; Autor et al., 2019).[7] I begin the analysis in 2006, as the Matrícula data are available from that year onward.

The ACS provides extensive indicators of civil, cultural, educational, and economic integration. For civil and political integration, I focus on naturalization. Formally, it refers to the process in which a foreign citizen obtains US citizenship upon meeting the requirements of the Immigration and Nationality Act. I examine marriage incidence and marriage to US citizens, which can signal return intentions and the desire for permanent residency. Marriage to US citizen indicates the migrant's marital link to a US citizen, irrespective of the spouse's origin (whether US-born or naturalized foreign-born). Cultural integration is captured through intermarriage behavior – marriage to Mexican-born, other foreign-born, or US-born natives – which promotes language acquisition and social network expansion (Chi and Drewianka, 2014; Meng and Gregory, 2005; Meng and Meurs, 2009). I also look at human capital accumulation and labor market behavior. More details on variable construction and limitations of the ACS are provided in Data Appendix C.1.

I restrict my 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 ensures they were neither directly

[7] Although analysis at the smallest geographic level possible (PUMA) would offer more variation in the treatment, I conduct the analysis at the CZ level. The MCAS data are available at the county level. Since PUMAs can be part of or an aggregation of counties, mapping county-level MCAS data to PUMAs introduces significant noise, especially in the former case. In contrast, CZs are defined as consistent aggregations of counties, allowing for a clean aggregation of the Matrícula data. As it is also possible to map PUMAs to CZs in the ACS, I opt for this approach. I then link each individual to their treatment variable based on their CZ.

exposed to the violence that began in 2007 nor selected into migration due to it, avoiding biases from time-of-arrival effects and selection.[8] Additionally, migrants are less likely to return the longer they stay in the destination country, with the highest return rates occurring within ten years of migration (Nekoei, 2013). Since I aim to examine changes in return intentions, I focus on a cohort that had been in the US for up to 13 years by 2012, as they are most likely to be affected. By focusing on those who migrated before the war, I ensure that the individuals were exposed to relatively similar and stable home country conditions before 2006.

I further restrict the sample to ensure comparability across commuting zones. Specifically, I include only 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. Overall, these criteria ensure that the analysis focuses on 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.

I present summary statistics for three distinct migrant groups using the 2006-2012 ACS surveys in Table 1. Column (1) includes all working-age, non-institutionalized Mexicans, column (2) focuses on those who migrated between 2000 and 2006, and column (3) further restricts the sample to balanced commuting zones with a Mexican population above the median, representing the sample used in the analysis. The analysis sample (column 3) is broadly similar to the full Mexican population in the US (column 1). 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 generally low, with only 25% of Mexicans naturalized between 2006 and 2012, and even lower for the 2000-2006 cohort (5.2%). Across the three columns, nearly 45% of migrants originate from municipios with a drug trade organization in 2004-2006. As shown in column (4), there are no statistically significant differences between the samples of columns (2) and (3).

Finally, the analysis incorporates various data sources to examine mechanisms and account for immigration enforcement, as detailed in Appendix C.2.

[8] Self-selection into migration could bias estimates, as violence may drive migration. The overall effect on the integration of those who moved would combine the contemporaneous effect of violence and the effect of selection at time of departure. My approach deals with this issue. Another concern is that newer cohorts, shaped by violence, might alter the composition of migrants interacting with older arrivals. However, I later show that migration from Mexico does not significantly respond to violence, and new migrants' characteristics remain unchanged, suggesting no changes in cohorts' "quality" over time (see Section B.6).

4 Empirical Framework

4.1 Exposure to Violence While in the US

The main aim of this paper is to estimate the effect of violence in the source regions of migrants on their integration. As mentioned in section 3.3, I focus on a sample of Mexican-born migrants who migrated to the US before the war on drugs, which means that their exposure to violence is indirect.

Ideally, one would want to have information on the municipio-of-origin of each individual migrant to assign them it's annual homicide rate. However, such information is not available in any administrative or survey data source. Alternatively, I use MCAS data to observe the distribution of migrants' municipal origins and compute the contemporaneous share of migrants from each source municipio in every US destination commuting zone.[9]

Using these weights, I construct my main independent variable, 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 the homicide rates in migrants' source municipios. Essentially, the homicide shock reflects the homicide rate in an "average" Mexican source municipio.[10] For each commuting zone j in calendar year t, the homicide shock, HS_{jt}, is calculated as follows:

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

where NTWK_{jmt} represent the contemporaneous network weights (equation 1). HR_{mt} is the annual homicide rate per 100,000 persons of 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.

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} represent the outcomes of interest for individual i in commuting zone j at year t, where $t \in$ [2006-2012]. I include a set of individual-level control variables, X_{ijt}, such as age, sex, and education indicators. Z_{jt} is a vector of controls at the commuting zone level. As the study covers a time period when immigration enforcement policies were significantly fluctuating, I control for

[9] The weights are measured contemporaneously to capture the most current distribution of migrants' sources, which is most likely to be influenced by the prevailing and contemporaneous violence.

[10] While the ideal approach would assign each migrant their municipio-of-origin homicide rate, the lack of such granular data means my alternative approach assigns an aggregate exposure measure at the commuting zone level. As a result, the homicide shock captures violence exposure as mediated by the distribution of migrants in a destination.

the presence of Secure Communities programs, E-verify laws, and 287(g) agreements in the commuting zone. In addition, I add Bartik-style measures of labor demand to account for changing economic conditions after the 2008 recession.[11]

I include commuting zone fixed effects, α_j, to account for any time-invariant unobserved heterogeneity at the commuting zone level. Furthermore, I include year fixed effects, λ_t, to control for national shocks that are common to all commuting zones and can impact migrants' return intentions and assimilation. Finally, my preferred specification also includes years since migration fixed effects, Λ_{ysm}, since migrants who have spent varying years in the US may exhibit different unobservable characteristics that affect their outcomes. I cluster the standard errors at the commuting zone level to account for potential error correlations among individuals within the same commuting zone (Cameron and Miller, 2015).

I normalize the homicide shock measure to have a mean of zero and standard deviation of one in all specifications. The main coefficient of interest, β, captures the effect of a one standard deviation increase in the homicide shock. A main source of 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 of the homicide shock were distributed randomly across years and commuting zones, the OLS model would estimate the causal impact of violence. However, this is unlikely to hold for several reasons.

First, although the homicide shock occurs in Mexico, while migrants reside in the US, the location of violence within Mexico is likely not random and might be correlated with municipio-specific factors. In this regard, both migrants and non-migrants (stayers) from a specific municipio-of-origin may share unobserved characteristics, such as socio-economic background, educational attainment, or cultural traits, that affect the occurrence of violence and the outcomes of interest, introducing omitted variable bias. For example, if migrants from lower socioeconomic backgrounds exert more effort to assimilate or stay in the US, and, simultaneously, are more likely to originate from areas experiencing more violence, the estimated effect of violence exposure on outcomes would be biased upwards. Conversely, violent areas may be those that have a collective or communal culture with stronger family ties. In such cultures, individuals are less mobile and experience lower labor market outcomes, which can hinder individuals from assimilating even if they migrate (Alesina et al., 2015). In this case, the bias could be downwards.

Second, the two components of the homicide shock (contemporaneous network weights and the homicide rates) could be affecting each other, leading to simultaneity bias. A spike in the homicide rate could drive people to migrate into different destinations, changing their networks,

[11] These measures are constructed following Watson (2013) and East et al. (2023), and are calculated separately for four groups: 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: $\text{Bartik}_{jt} = \sum_d \frac{Emp_{gdj,2005}}{Emp_{gj,2005}} \times NationalEmp_{dt}$, where Emp represents total working-age employment.

while migration from the municipio could reduce violence as individuals leave and avoid conflict. Lastly, reverse causality is possible, where migrants who are more assimilated and economically better off in the US send more remittances to their municipio of origin, leading to more violence as cartels try to extract that financial resource. The direction of bias here depends on whether more (less) assimilated migrants send more (less) remittances, which could positively (negatively) impact violence.

Therefore, OLS estimates are prone to significant potential bias, though ascertaining the direction of this bias is challenging. To address these concerns, I use an instrumental variable approach, fixing the network at its 2006 level and exploiting plausibly exogenous variation in violence that is not correlated with the outcomes of interest.

4.2 Instrumental Variable Approach

The instrumental variable exploits identifying variation from three sources: (1) spatial variation in the distribution of source municipios of migrants across commuting zones, (2) geographic variation in the locations of drug trade organizations within Mexico, and (3) temporal variation in cocaine seizures in Colombia. In the following subsections, I provide a detailed explanation of the intuition behind these components.

4.2.1 Migrants' Municipal Origins

The homicide shock includes a network weight component that captures the distribution of Mexican source municipios in each US commuting zone, effectively transmitting the violence shock from Mexico to the US. As discussed in Section 4.1, this network component is contemporaneous, which may introduce simultaneity bias if current networks are influenced by the ongoing war in Mexico.

To address this, I use the 2006 pre-war network values in the instrument. Recent location patterns are largely shaped by historical networks, as distinct source municipios in Mexico have long-established ties to specific US destinations due to historical accidents that formed migratory routes. These networks lower migration costs, reinforcing destination choices over time (Carrington et al., 1996; Jaeger, 2000; Munshi, 2003).[12] Thus, this approach mitigates endogeneity concerns while allowing for accurate predictions of future networks.

[12]Munshi (2003), using data from the Mexican Migration Project, finds that Mexican communities typically send migrants to three different destination areas in the US. According to that data, 90 percent of each source region's migrants end up in the same destination region.

4.2.2 Geographic Variation

To capture geographic variation in violence within Mexico, I exploit the pre-war (2004-2006) cross-sectional distribution of drug trade organizations (DTOs) across municipios. Since DTO locations after the war's onset may be endogenous, I rely on their pre-war locations. A municipio is classified as having DTO presence if at least one operated there during this period. Figure 3 highlights these municipios in dark blue, showing substantial geographic variation.[13]

Importantly, during the war on drugs, municipios with DTOs disproportionately experienced a large increase in violence. Figure 4 plots average homicide rates from 2000 to 2012 separately for municipios with (blue line) and without DTOs (red line). Before 2007, municipios with DTOs had a slightly higher homicide rate, possibly due to drug cartels engaging in illicit activities as well as drug-related operations to generate revenue. However, both groups exhibited stable and parallel trend in the homicide rate.[14] Starting in 2007, the homicide rate diverges between the two groups, with a significant increase in municipios with DTO presence.

As discussed in section 2, Calderón's kingpin strategy is widely recognized as a primary factor in the escalation of violence by creating power vacuums within DTOs and leading to their fragmentation. DTOs used violence to intimidate authorities and the public, heightening fear and insecurity. In fact, areas with DTO presence exhibit greater fear of victimization, even among citizens not directly targeted by violence (Gutierrez-Romero, 2016).

4.2.3 Temporal Variation

Another factor that contributed to the spike of violence in Mexico after 2007 is intensified cocaine seizures by the Colombian government, which reduced cocaine supply in drug markets. Although cocaine is cultivated in countries like Bolivia and Peru, the majority of cocaine dominating the US market – 73 percent – is produced in Colombia (National Drug Control Agency, 2015). In contrast, Mexico is not a source country of cocaine. Mexico's drug cartels purchase most of their cocaine from Colombia, and then smuggle it across the border to the US. While Mexican cartels produce other drugs, a substantial proportion of their profits during the 2000s came from trafficking drugs to the US, especially cocaine (Kilmer et al., 2010).

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

[14] Additionally, municipios with DTOs were not systematically disadvantaged before the war. Using data from 2000 and 2005 Mexican Censuses, I find that they were on average better off economically, with higher literacy, employment, and income levels (Appendix Table A2). Emigration and return migration rates were also lower in DTO areas, mitigating concerns that DTO presence simply captures weaker regions or a higher baseline propensity to migrate.

Like Mexico, Colombia has repeatedly attempted to combat drug production. Figure 5 shows annual cocaine seizures per hectare of coca cultivation, reflecting these efforts. In the early 2000s, eradication strategies focused on coca crops to disrupt cocaine supply chains, with seizures peaking at 1.3 kg per hectare in 2004 before declining until 2006. Amid public scrutiny, the government shifted its approach in the mid-2000s, targeting cocaine manufacturing and transportation. This made seizures more effective, rising from 0.78 kg per hectare in 2007 to 1.71 kg per hectare in 2012.

The escalation of cocaine seizures in Colombia after 2006 reduced the supply of cocaine available to Mexican cartels, driving up cocaine prices and intensifying conflict over scarce rents (Castillo et al., 2020).[15] Violence escalated particularly in areas where DTOs operated. This shock is plausibly exogenous to socioeconomic conditions in Mexico, as it was driven by local political cycles and funding availability in Colombia, with seizure success largely depending on chance rather than coordinated international enforcement. Thus, I incorporate this external supply shock into the instrument to generate temporal variation in violence.

The last two subsections outline the key components of the instrument, DTO presence and the Colombian cocaine supply shock. In Appendix B.2, I show that their interaction strongly predicts variation in homicide rates across Mexican municipios and provide additional evidence supporting the exogeneity of the cocaine supply shocks to conditions in Mexico.

4.3 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 $\text{NTWK}_{jm,2006}$ represents 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 on drugs. $Col_t^{Cocaine}$ measures annual Colombian cocaine seizures per hectare of coca cultivated land in Colombia.

This instrument follows a non-standard shift-share structure, interacting two main components. The cross-sectional share is based on the pre-war municipio network weights interacted with an indicator for DTO presence, capturing the share of migrants from municipios with DTO presence. The temporal shift is a common cocaine supply shock. This is the main distinction that sets it apart from a standard shift-share IV. Unlike having a separate shift for each Mexican municipio, here I have a common external shock.

[15] 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).

In the standard shift-share literature, consistent estimation requires either exogenous shares (Goldsmith-Pinkham et al., 2020) or exogenous shifts (Borusyak et al., 2022). In this setting, the cocaine supply shock is plausibly exogenous, as its success largely depends on chance and is not co-determined by the outcomes of Mexican migrants in the US. However, this shock is common for all Mexican municipios, and is distributed across the US commuting zones through the shares. Thus, my approach relies on both the variation in and the exogeneity of the shares (Goldsmith-Pinkham et al., 2020). This is further motivated by the pre-2007 period of low and stable violence in Mexico, followed by differential increases across municipios based on DTO presence, resembling a difference-in-differences framework.

Therefore, the validity of this IV relies on the assumption that pre-war shares of migrants from DTO municipios are uncorrelated with the error term. The main identification concern is that migrants from these municipios may have been on different integration trajectories even before the war, affecting their outcomes in the post-war period. In this section, I conduct checks that address this threat and argue for the validity of the exclusion restriction by scrutinizing the cross-sectional component of the IV.

First, to assess whether migrants in high and low exposure areas in the US differ systematically prior to the onset of the drug war, I examine their baseline characteristics in 2006. High (low) exposure commuting zones are defined as those with above (below) the median share of migrants from municipios with DTO presence.[16] Table A4 and Table A5 present the summary statistics of high (column 1) and low exposure areas (column 2) in 2006, as well as the statistical difference between the two (column 3). This analysis points out any level differences between migrants from low and high exposed regions before the onset of the war on drugs.[17]

As shown in Table A4, migrants in both areas are broadly similar in years since migration. Those from high exposure areas are, on average, slightly older and less likely to be male, with differences being significant at the 5 percent and 1 percent levels, respectively. Educational attainment is broadly similar across groups, with no significant difference in average years of schooling. There are, however, small differences within categories. Migrants from high-exposure areas are 4.3 percentage points less likely to have completed a high school degree ($p < 0.01$) but somewhat

[16] In Table A3, I compare changes in Bartik measures between 2006 and 2012 across commuting zones with above- and below-median shares of migrants from municipalities with DTOs. The results show no statistically significant difference in labor demand shocks between these groups, suggesting that exposure to the Great Recession is not systematically correlated with high migration rates from DTO municipalities. Importantly, the results are not sensitive to excluding Bartik controls and are available upon request.

[17] Ideally, I would examine pre-trends in average outcomes for high and low exposure commuting zones to rule out differential trajectories. However, a major limitation is that the ACS data for 2001-2004 lack PUMA identifiers, making it impossible to crosswalk each person's location to a commuting zone. This leaves only three usable pre-treatment years (2000, 2005, 2006), which adds noise. Still, the raw outcome trends do not suggest systematic differences before the rise in violence, nor clear structural breaks around the 2008 recession. As a further check, I estimate an event-study specification (reported in section 6.2), which similarly shows no evidence of differential pre-trend.

more likely to report some college education. All of these baseline characteristics are controlled for in the analysis.

Turning to outcomes, Table A5 shows naturalization rates are equally low (around 4 percent) in both groups. Marriage is more common in high exposure areas (by 5 percentage points), especially marriages to other Mexicans. Employment and hours worked are lower in high exposure areas, which may be due to the higher proportion of Mexican females. Overall, the differences do not suggest any consistent pre-war pattern in integration across exposure areas.

Next, to verify that the instrument is not correlated with pre-existing trends in integration, I examine whether exposure to the instrument during the post-period predict outcome trends in the pre-period (2000-2006). Specifically, I estimate a long-difference regression of the form:

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

where Δ $Y_{j,2000-2006}$ is the change in the mean outcome for commuting zone j between 2000 and 2006. Controls include changes in Bartik labor demand and immigration enforcement measures over the same period, as well as average demographic characteristics. The regression is weighted by the 2006 Mexican population in each commuting zone.[18]

Figure 6 presents the estimates and 95% confidence intervals for each pre-2006 outcome trend. Most coefficients are statistically insignificant and are precise zeros. While the estimates for labor force participation and employment are slightly larger, they remain non-significant. These results support the key identifying assumption that the instrument is uncorrelated with pre-existing outcome trends and indicate that identification is driven by the post-2007 surge in violence.

As an additional placebo and in order to gauge whether migrants from areas with DTOs were already on different integration trajectories before the outbreak of violence, I regress changes in outcomes between 2000 and 2006 directly on the commuting zone's share of migrants from DTO municipios for two arrival cohorts: migrants arriving in 1993-1999 and in 2000-2006. (Figure A3). In both cohorts, baseline DTO exposure does not systematically predict changes in integration outcomes. An F-test of equality across cohorts likewise shows no significant differences for the majority of outcomes. This provides reassurance that the instrument is not spuriously correlated with pre-period integration dynamics.

A final concern is that the Colombian cocaine supply shock could also have a trickle-down effect on US drug markets and drug-related violence. If this violence is concentrated in areas with high (or low) numbers of migrants from municipios with DTOs, that would violate the exclusion

[18]Results are not sensitive to weighting using the average Mexican population in the pre-period (2000, 2005, 2006) or not weighting at all. These results are available upon request.

restriction. To address this, I test the effect of the homicide shock on drug sale or possession arrests, using Uniform Crime Reporting data obtained from Kaplan (2021). As shown in Appendix B.3, I find no significant effects (Table B2). To the extent that drug arrests proxy for drug-related violence, this suggests that the homicide shock did not affect such violence in the US.

4.4 First Stage Results

I assess the instrument's power by estimating its correlation with the homicide shock. The first-stage estimates reported in Table 2 suggest that the instrument is a strong predictor of the homicide shock across commuting zones. Coefficients are statistically significant at the 1 percent level across all specifications and increase in magnitude with added controls. In my preferred specification (column 6), a one standard deviation increase in the instrument corresponds to a 1.017 standard deviation increase in the homicide shock. The Kleibergen-Paap F-statistic is 12.46, exceeding the conventional threshold of 10 (Staiger and Stock, 1997; Stock and Yogo, 2005). Using the Montiel Olea and Pflueger (2013) IV test, the effective F-statistics is 20.3, which is higher than the critical value of 15 for a 20% worst case bias but slightly lower than the critical value of 23.1 for a 10% worst case bias.

The instrument's predictive power is relatively weaker in the US sample than in the Mexican sample (Table B1), possibly due to changes in migrant network destinations after the onset of the drug war. In the next section, I estimate the second-stage results using the two-stage least squares (2SLS) estimator. To ensure robustness, I also construct Anderson-Rubin confidence intervals (Andrews et al., 2019; Lee et al., 2022), and report estimates using the Limited Information Maximum Likelihood method (Cameron and Trivedi, 2005).

5 Results

In this section, I present the main results of the analysis. Both the instrument and the homicide shock are normalized, so the coefficients are interpreted as the percentage point change in outcomes per standard deviation increase in the homicide shock (which corresponds to almost 12 homicides per 100,000).[19]

[19]The average homicide shock is 22, almost double its standard deviation. Over the sample period, the homicide shock surged 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 stood at 7.8 per 100,000 (CDC/National Center for Health Statistics, 2022). In Louisiana, the most violent state, the homicide rate was 11.7 per 100,000.

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) to (3) indicate a positive and significant association between the homicide shock and the outcomes. A standard deviation increase in violence in the average sending municipio is associated with a 0.3 percentage point (p.p.) increase in the likelihood of naturalization, a 1 p.p. increase in the likelihood of marriage, and a 0.6 p.p. increase in the likelihood of marriage to US citizens.[20]

The 2SLS estimates in columns (4) to (6) show a similar behavioral response but with larger magnitudes, implying that the OLS estimates are downward biased. Specifically, a standard deviation increase in the homicide shock leads to a 1.7 p.p. increase in the likelihood of naturalization (column 4), a 43 percent increase relative to the 2006 baseline mean for the Mexican cohort in my sample ($p < 0.05$). That is, a 3.58 percent increase in naturalization per unit increase in the "average" municipio's homicide rate. While this effect appears large, it is partly due to the very low baseline naturalization rate – only 3.9 percent of the cohort had naturalized in 2006.

To contextualize the magnitude of this effect, I compare it to other interventions affecting naturalization. A randomized controlled trial by Hainmueller et al. (2018) offering a $680 application fee voucher increased naturalization applications by 41%. Similarly, Yasenov et al. (2019) show that a 2010 USCIS fee waiver reform increased naturalization rates by 1.5 percentage points among low-income eligible immigrants – an effect similar in size to mine. Amuedo-Dorantes and Lopez (2021) estimate that one additional annual interior enforcement initiative raised naturalization by 13% among Mexican legal permanent residents; my estimate implies an effect equivalent to implementing three such initiatives per year.

I also estimate a 2.8 percentage points increase in the likelihood of marriage. Particularly, heightened exposure to violence increases the migrants' propensity to marry a US citizen by 2.5 p.p., a 29 percent increase relative to the baseline mean ($p < 0.01$).[21] Next, I explore the impact of violence on intermarriage patterns of Mexicans in the US, a proxy of their cultural integration. To do

[20] Note that to observe the characteristics of the spouse, they should be present in the household. Therefore, if an individual is married but their spouse is absent, their outcome of being married to a US citizen cannot be observed, resulting in fewer observations in columns (3) and (6). Appendix Table A6 further examines marriages by the presence of the spouse in the household, suggesting increases in both types of marriages.

[21] Marriage to US citizens in this context is a stock measure. The increase could indicate either an increase in new marriages to US citizens, an increase in naturalization among individuals within existing marriages, or a decrease in divorces amongst marriages with US citizens. In Appendix B.4, I try to unpack each of these channels. The results suggest that the observed increase in marriages to US citizens primarily stems from an increase in new marriages with US citizens. It is influenced to a lower extent by heightened naturalization within existing marriages, while changes in marriage stability do not appear to be a factor. However, these results are imprecise, as the information regarding the years of marriage and naturalization is only available starting from 2008, causing me to lose 32% of the sample.

so, I examine the country of origin of the US citizen spouse whom Mexicans are marrying, focusing on three mutually exclusive outcomes: marriage to US-born natives, marriage to naturalized non-Mexican foreign-born individuals, and marriage to naturalized Mexicans.[22]

The results of Table 4 indicate that heightened violence increases both, marriage to US-born natives and to naturalized Mexicans. Specifically, I estimate a 1.1 p.p. increase in the likelihood of marriage to US-born natives relative to a baseline mean of 4.6 percent for a standard deviation increase in the homicide shock ($p < 0.1$, column 4). On the other hand, the propensity to marry a naturalized Mexican increases by 1.5 p.p., a 42 percent increase relative to a baseline mean of 3.5 percent ($p < 0.01$, column 6). The fact that both of these estimates are positive suggests that the citizenship of the spouse is important, irrespective of their particular nationality.[23]

Overall, my findings show that heightened violence in migrants' source regions increases civil integration, as evident by higher rates of naturalization. Furthermore, Mexicans exposed to heightened violence increasingly marry US citizens, which could strengthen their social networks and cultural integration. While Mexicans exposed to heightened violence are increasingly marrying US citizens, their intermarriage rates are stable, as the effects are more pronounced for marrying a Mexican compared to marrying a US-born native.

5.2 Human Capital and Labor Market Responses

The previous section shows that heightened violence in source municipios prompts Mexicans to pursue naturalization and marriage to US citizens. As migrants plan for permanent settlement, they are more likely to invest in destination-specific human capital (Adda et al., 2022; Cortes, 2004). Naturalization may also improve labor market outcomes by expanding access to formal employment (Bratsberg et al., 2002). This section investigates whether Mexican migrants have altered their behavior along these margins.

Labor Market Effects. I first examine the impact of violence on migrants' labor supply and wages in the upper panel of Table 5. The 2SLS estimates indicate a positive but small and statistically insignificant relationship between violence and labor force participation (column 5), employment (column 6), and hours worked (column 7). The 95 percent confidence intervals rule out large labor market effects. For example, the estimated coefficient on employment ranges from -/+

[22] Instead of solely focusing on the nationality of US citizen spouses, I also examine the effect on marriage by spouse nationality, regardless of their citizenship status in Table A7 of the Appendix. The results show a decrease in marriage to non-Mexican foreign-born individuals and an increase in marriage to Mexicans, although these estimates are noisy.

[23] An interesting question is if alongside the rise in marriages, there is also a parallel increase in cohabitation between partners. Cohabitation reflects a desire to establish roots in the US, even though it lacks the legal implications associated with permanent residency. ACS data do not allow tracing whether migrants who entered into marriage were previously in a cohabiting arrangement. Yet, in Table B5, I explore the effect of the homicide shock on overall cohabitation and elaborate on them in Appendix B.5. The results suggest a decrease in cohabitation, which might indicate a flow from cohabitation to marriage.

0.02, implying at most a 2 p.p. change (2.8 percent relative to a 69 percent baseline). An exception is hourly wages, which show a marginally significant increase of $0.90 per standard deviation increase in the homicide shock ($p < 0.1$). These effects are consistent across age groups, years since migration, and sex.

Human Capital Accumulation. Results show no evidence that violence in migrants' source regions affects their years of schooling, school attendance, or self-reported English skills (lower panel of Table 5). Notably, migrants are less likely to report speaking English poorly (column 7), suggesting potential language improvement, though the effect is statistically insignificant. The 95 percent confidence interval on English proficiency ranges from -0.0331 to 0.0158, with the lower bound implying a 4.2 percent decrease in the likelihood of reporting poor English relative to the baseline mean. Similarly, column (8) shows a non-significant negative relationship between violence and Spanish use at home, with a narrow confidence interval (-0.0089 to 0.00852). The left edge suggests a 0.89 p.p. reduction, quite small relative to the 97 percent baseline. Overall, confidence intervals are tight enough to rule out even modest changes in language proficiency, and null effects persist across subgroups.[24]

Human Capital Accumulation of Children. The results so far indicate that violence had no measurable impact on human capital accumulation or labor supply among Mexican migrants. Beyond the mechanisms explored in Section 7, a key reason may be that the analysis focuses on adults, who have an average age of 31.5 and an already high employment rate (70 percent in 2006). For such adults, pursuing formal education may be uncommon, and acquiring a new language is more challenging, leaving little scope for significant changes in these outcomes. Instead, migrants may adapt by shifting investment toward their children's education, another form of integration. To examine this response, I analyze children aged 6 to 18 whose parents are in my analysis sample. These children were either born in the US or in Mexico. If born in Mexico, they arrived between 2000 and 2006 with their parents.[25]

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

These results suggest that while adult migrants do not pursue further education, they invest in

[24]The results of the heterogeneous effects on employment and education outcomes are available upon request.

[25]Children in the ACS can only be identified if living with their parents in the same household. In my sample, 46 percent were born in Mexico, the average age is 11 years, and 51.9% 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.

their children's education, particularly for those born in Mexico who lack direct access to permanent residency.

6 Selection and Robustness

6.1 Selection

Since the ACS is a repeated cross-sectional survey, one threat to the validity of the results is selective return migration or attrition from the sample, which could alter the cohort's composition over time. To gauge for this issue, I formally check whether the sample's composition changes.

First, I examine whether the cohort size changes over time by tracking surveyed units and their weighted population in each survey year. Table A8 shows that both remain relatively stable. This suggests no obvious or significant attrition affecting the cohort of interest. If there is selective attrition, return migration, or even aging out of the sample, the cohort would shrink in size.

I also perform a test where I replicate the baseline regression of equation 3 with the outcomes being the characteristics of the migrants in the sample. Specifically, I estimate the effect of the homicide shock on the age, sex, educational attainment, and years spent in the US, including commuting zone and year fixed effects. The 2SLS estimates are presented in Table A9, indicating that violence does not affect the age or educational composition of the sample. Only one characteristic out of eight seems to respond to violence, which is the likelihood of the respondent being a male. For a one standard deviation increase in the homicide shock, the likelihood of the latter increases by 3.5 percentage points.

To summarize, the analysis indicates that violence does not significantly impact the sample's composition. These results show that the main findings are not driven by a selective change in respondents' characteristics.

6.2 Robustness Checks

6.2.1 Alternative Specifications

To assess dynamics and verify the absence of differential pre-trends between migrants originating from municipios with and without a DTO presence, I estimate an event-study specification, where treatment intensity is defined as the commuting zone's baseline share of migrants originating from municipios with a DTO, interacted with year dummies. This exercise exploits the same cross-sectional variation of the IV, as the shares are a key source of identifying variation. The main assumption here is that, absent the war on drugs, migrants in commuting zones with higher baseline

exposure would have followed parallel trends in integration outcomes relative to those with lower exposure.

The results, presented in Figure A4, reveal flat and statistically insignificant coefficients prior to 2006, consistent with parallel pre-trends. This indicates that migrants from DTO municipios were not on different integration trajectories and were not differentially selected before the escalation of violence. After 2006, outcomes diverge, although some of the estimates are at times noisy. Naturalization rises steadily in more exposed commuting zones, reaching gains of about 1-2 percentage points by 2012. Marriages to US citizens also increase after 2008, while marriages with Mexicans remain flat. There is further evidence of an increase in marriages to naturalized Mexicans. Overall, the event-study dynamics align with the 2SLS results.

Because several outcomes are absorbing states, like naturalization, I also estimate a complementary long-difference specification where outcomes are 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 the share of migrants from DTO municipios and the change in normalized cocaine seizures over the same period. Controls include pre-period demographics as well as changes in Bartik labor demand and immigration enforcement.

The results in Table A10 mirror the main estimates. A one standard deviation increase in cumulative violence raises naturalization by 2.8 percentage points (column 1), nearly 80 percent of the average increase over this period ($p < 0.05$). Violence also increases marriages to US citizens and naturalized Mexicans. This analysis yields results consistent with the 2SLS estimates, though they are less precisely estimated likely due to sampling noise from relying on only two repeated cross-sections. Overall, the main results are robust to these alternative specifications.

6.2.2 Alternative IV Estimators and Confidence Interval Computation

As discussed in section 4.4, there are potential concerns about weak instrument identification when using the conventional rule-of-thumb F-statistic threshold. To address this, I construct Anderson-Rubin confidence intervals, which are robust to weak identification (Anderson and Rubin, 1949). I report them in the second row of Table A11 in the Appendix. For comparison, the first row reports standard 2SLS confidence intervals computed using standard asymptotic theory, and the third row presents Limited Information Maximum Likelihood (LIML) estimates and standard errors. The Anderson–Rubin intervals show only marginal widening and remain close to the 2SLS bounds. The LIML point estimates also closely track the 2SLS results.

6.2.3 Direct Spillovers of the Mexican War on Drugs

Second, some high-exposure areas are located along the US–Mexico border, particularly in Texas and Arizona. A potential concern is that migrants in these regions may be directly affected by the drug war due to their proximity to trafficking routes, or more likely to be circular migrants, increasing the risk of both direct and indirect exposure to violence. Excluding the eleven US commuting zones that border Mexico, Panel A of Table A12 shows that the results hold, are larger in magnitude, and are more precise.

6.2.4 Year-by-Macro-Region Fixed Effects

Since different macro-regions may experience distinct economic or policy shocks that year fixed effects might not fully capture, Panel B of Table A12 includes Year x Macro-region fixed effects. This accounts for differential time trends across broad areas in the US. The main findings remain similar, with similar effect sizes. Some estimates become marginally less precise due to the reduced variation from additional fixed effects.

6.2.5 Network Construction

I perform several robustness checks by altering the construction of migrant networks used in the homicide shock and IV. First, to address concerns about the endogeneity of contemporaneous networks in the homicide shock, I construct the measure using pre-war (2006) network weights (Panel C). Second, since relying on 2006's MCAS data may introduce noise and measurement error, I follow prior work and aggregate 2006 and 2007 Matrícula Consular records to define initial IV network weights (Panel D). Third, Panel E defines the network measure using both initial and renewal MCAS issuances. Fourth, while most US states accepted the Matrícula Consular as valid ID, Arizona banned it in 2011 (Associated Press, 2021). Arizona's stricter immigration policy may also have affected migrants' mobility, naturalization, and marriage decisions, introducing measurement error in the state's network weights. I replicate the analysis excluding all commuting zones in Arizona (Panel F). Across all specifications, the results remain consistent with the main findings, confirming the robustness of the estimates to alternative network definitions.

6.2.6 Falsification Tests

Another concern is that the results may be driven by specific conditions within commuting zones that are consistently correlated with migrants' naturalization or marriage, rather than violence in migrants' origin regions. To investigate this, I conduct two placebo exercises.

First, I replicate the main analysis using a sample of Central American migrants who share similar observable characteristics with Mexicans but are not connected to the violence occurring in Mexican municipios. As shown in Panel G of Table A12, the 2SLS estimates show no significant effects of the homicide shock on Central American outcomes. Among the six estimated coefficients, only one is statistically significant at the 5 percent level, namely the likelihood of marriage to Mexicans. This suggests that the observed effects are not driven by broader labor market or institutional conditions in high-exposure commuting zones.

Second, to assess whether the homicide shock operates specifically through migrant networks, I construct a placebo homicide shock using network weights from municipios that send few or no migrants to each US commuting zone. Because these municipios are not the primary origins of migrants, violence there should not affect migrant behavior. Consistent with this, re-estimating the 2SLS model with the placebo measure yields no significant effects on naturalization or marriage (Table A13). Together, these exercises reinforce the conclusion that the effects of Mexican violence are transmitted to the US through migrant networks, which channel information, salience, and emotional ties to specific regions of origin.

6.2.7 Sample Sensitivity

My main analysis includes commuting zones with at least one Mexican migrant in every year and a pre-period Mexican population above the 50th percentile. In Table A14, I show the robustness of results to varying sample definitions. Panel A estimates the model without any commuting zone restrictions, essentially using the sample from column 2 of Table 1. 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 with the balanced-panel condition. All samples are restricted to Mexican-born, working-age, non-institutionalized individuals who migrated between 2000 and 2006.[26] The results are robust to these sample variations.

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 start of the war in 2006, the observed responses cannot be attributed to direct exposure to violence or selection into migration during wartime. Instead, I evaluate a set of alternative channels.

[26] 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.

7.1 Emotional and Familial Ties

One potential explanation is that violence in Mexico triggers emotional distress or creates financial pressure to support family members left behind. Prior research suggests that worsening conditions in migrants' countries of origin can adversely affect mental health (Akay et al., 2017; Nguyen and Connelly, 2018) or lead to increased remittances. These channels imply opposing effects on labor supply and productivity.

I cannot observe whether migrants have any remaining family members in their country of origin, which limits my ability to test the family ties channel directly. Given that Mexican men are more likely to migrate alone, one might expect gendered responses if family pressure was operative. However, Figure A5 shows no substantial differences in effects by sex. At the household level, exposure to violence reduces the likelihood that new migrants join an existing household after 2006 (Table A15), and broader Mexican migration to the US does not significantly increase during this period (Appendix B.6). These patterns suggest that migrants are not responding to violence by facilitating family reunification.

Taken together, the absence of changes in labor market behavior, household formation, or broader migration flows suggests that emotional distress and familial obligations are unlikely to be the primary mechanisms.

7.2 Declining Return Intentions

A more compelling explanation is that rising violence, along with fear of victimization, reduces migrants' willingness to return to Mexico. In this framework, the observed increases in naturalization and marriage to US citizens reflect a shift in long-term settlement intentions.

Several pieces of evidence support this channel. First, heterogeneity by time since migration (Figure A6) shows that newly arrived migrants (0-3 years) exhibit the largest increase in marriage to US citizens and naturalized Mexicans, consistent with return decisions being more flexible early on, 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.

Second, the effects are concentrated among low-educated migrants (Figure A7), 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.[27]

[27] One concern is that these marriages may be strategic rather than reflective of deeper integration. That is, "sham" marriages pursued to secure legal status. While I cannot directly observe marital intent, several factors are worth noting. First, the data show that spouses are in the same household, which limits the scope for fraudulent arrangements involving fictitious or absent partners. Second, I find no evidence of increased divorce rates following marriage, though

Third, while violence does not affect adults' education or employment, I find positive effects on the educational outcomes of their children, suggesting that migrants also invest in their children's integration as their prospects of returning decrease.

Finally, I use data from the 2010 Mexican Census to examine actual return migration flows. The Mexican Census covers only 2005-2010, missing the peak years of violence (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 pattern also aligns with the evidence in column (3) of Table B6, where I show that the Mexican migrant cohort used in the main analysis expands in response to violence, indicating reduced return migration among this group.

Overall, migrants respond to violence by making destination-specific investments that reflect a growing intention to remain and integrate in the US. The type of investment varies with the available opportunities: those who are eligible pursue naturalization, newer migrants seek alternative legal pathways, and some also invest in their children's long-term integration.

7.3 Other Channels

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 their local sex ratio (Table B4). This suggests that the observed increase in marriage is 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, and officers are unlikely to have detailed information about conditions at the municipio-level. There were also no systematic changes in officer discretion during this time in the US.

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 the pre-war locations of

this result is only suggestive (Appendix B.4). More broadly, these marriages reveal a clear preference to remain in the US and secure legal permanence, consistent with the broader pattern of reduced return intentions.

drug trade organizations and external cocaine supply shocks.

I find that heightened violence in migrants' home regions increases the likelihood of naturalization and marriage, particularly to US citizens. This includes both US-born and naturalized Mexican spouses, suggesting a shift in partner preferences toward those who facilitate permanent residency. In contrast, I find no evidence of changes in labor market outcomes or adult human capital investment. However, I do find increased investment in their 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 important implications for immigration policy. While refugees are often recognized as permanent arrivals, economic migrants from violence-affected regions may face similar challenges without receiving comparable support. Facilitating their integration – particularly in employment and language – may be especially beneficial when conditions in their countries of origin reduce the likelihood of return. As more migrants come from conflict-affected or unstable regions, such policies could play a key role in supporting integration.

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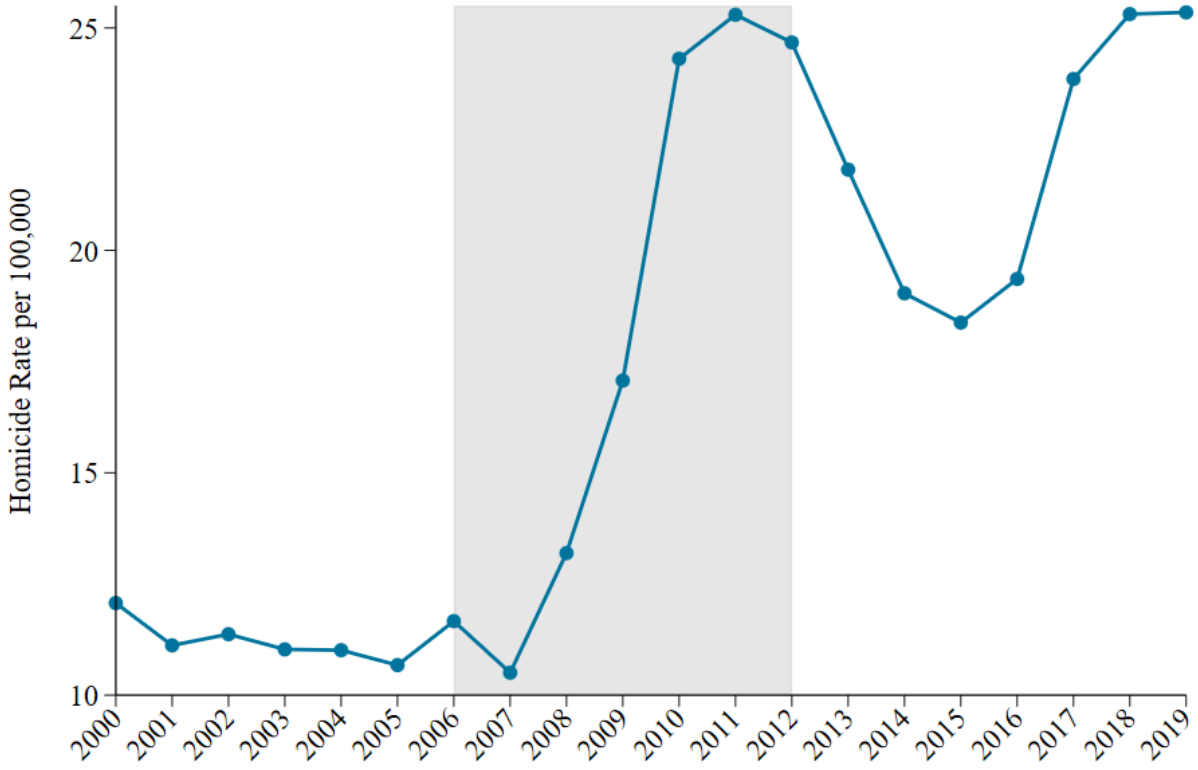
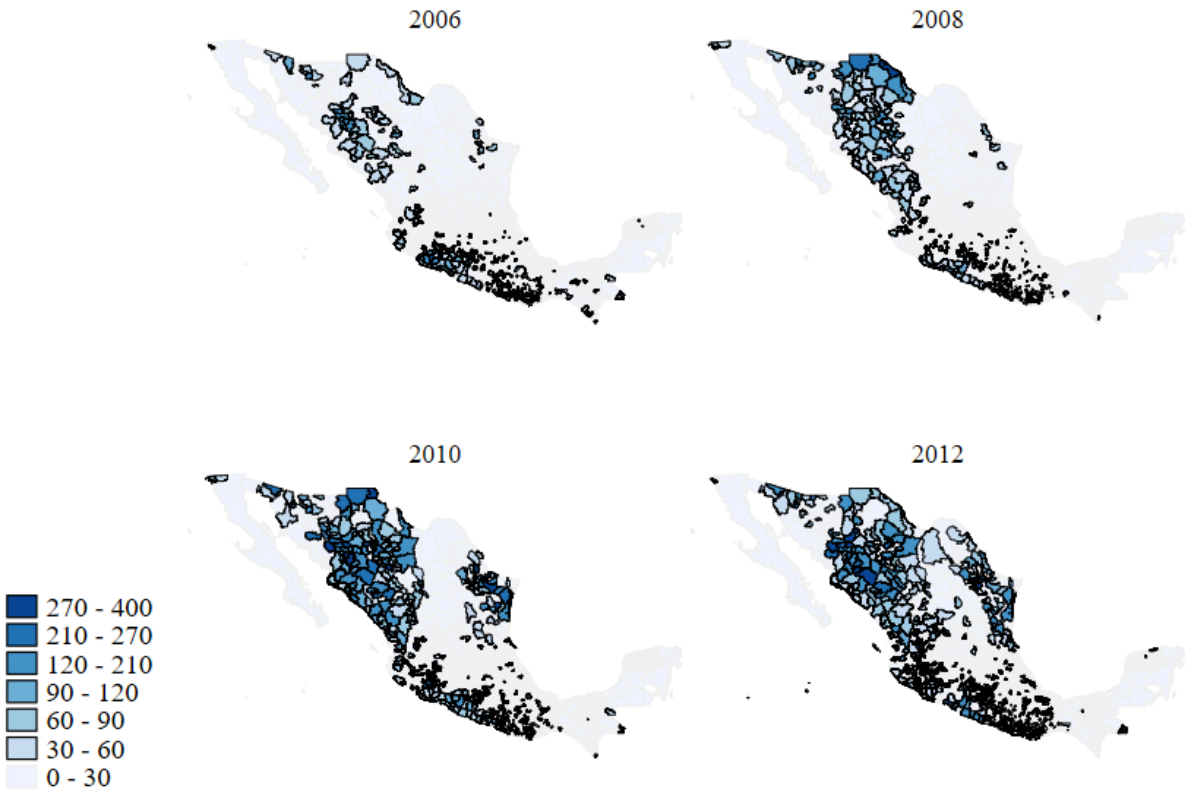
9 Figures and Tables

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



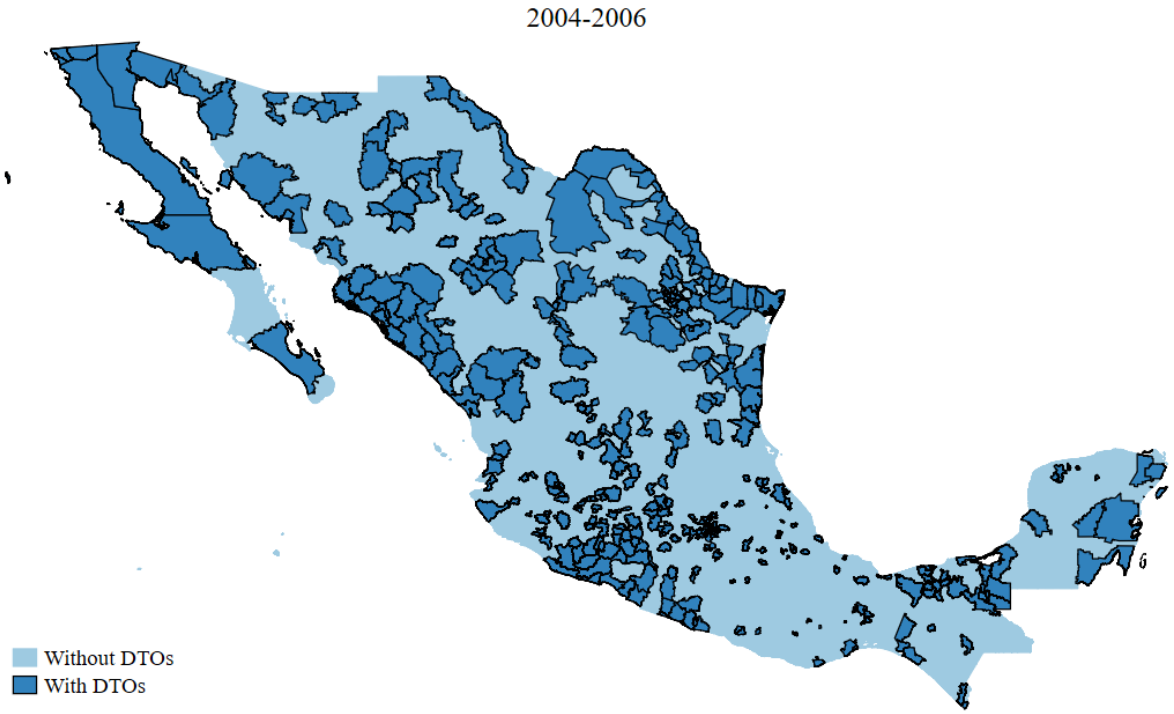
Notes: This figure displays the average annual homicide rate across Mexican municipios by year. Each municipio's homicide rate is calculated as its yearly number of homicides divided by the municipio's 2005 population per 100,000. The shaded region represents the time period covered in the analysis,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

Figure 2: Annual Homicide Rate in Mexican Municipios



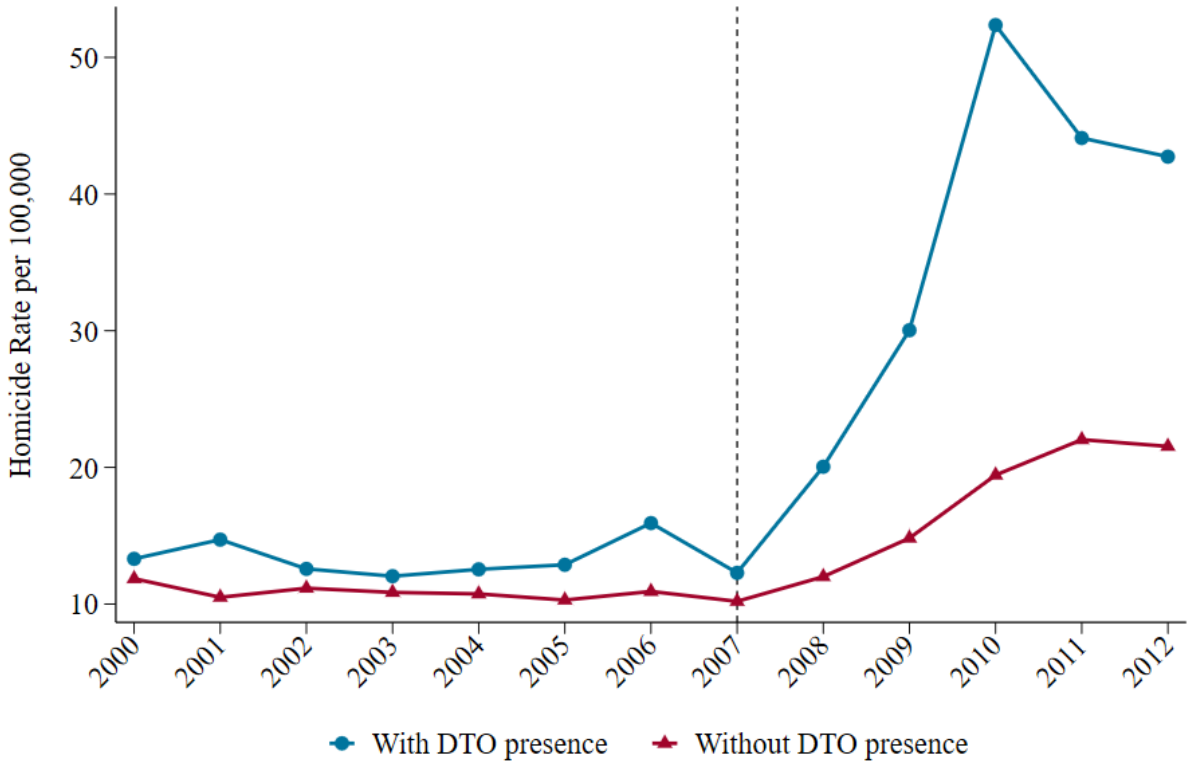
Notes: This figure displays maps of the distribution of the annual homicide rate per 100,000 persons across Mexican municipios by year. Data source: INEGI, 2006-2012.

Figure 3: Geographic Distribution of Drug Trade Organizations across Mexico



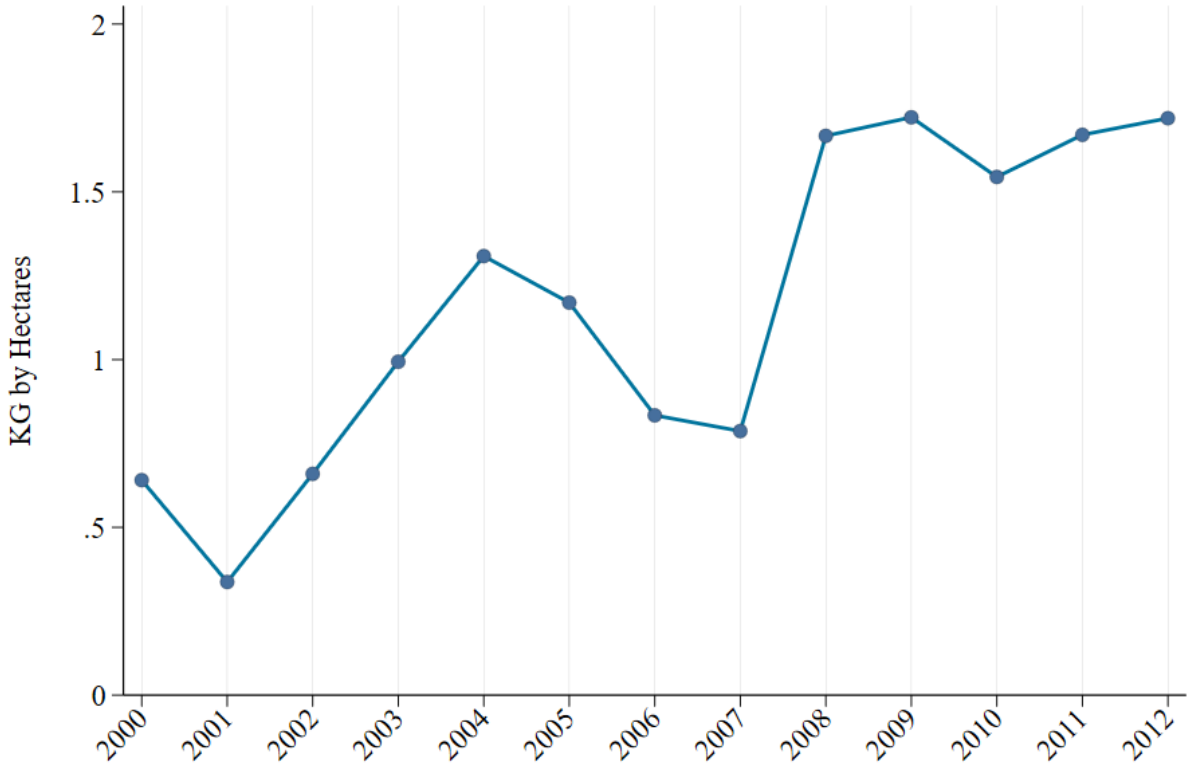
Notes: This figure illustrates the geographic distribution of Drug Trade Organizations (DTOs) in Mexican municipios between 2004 and 2006. Municipios colored in dark blue are those that had at least one DTO present in any of these three years, while municipios colored in light blue indicate those that 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



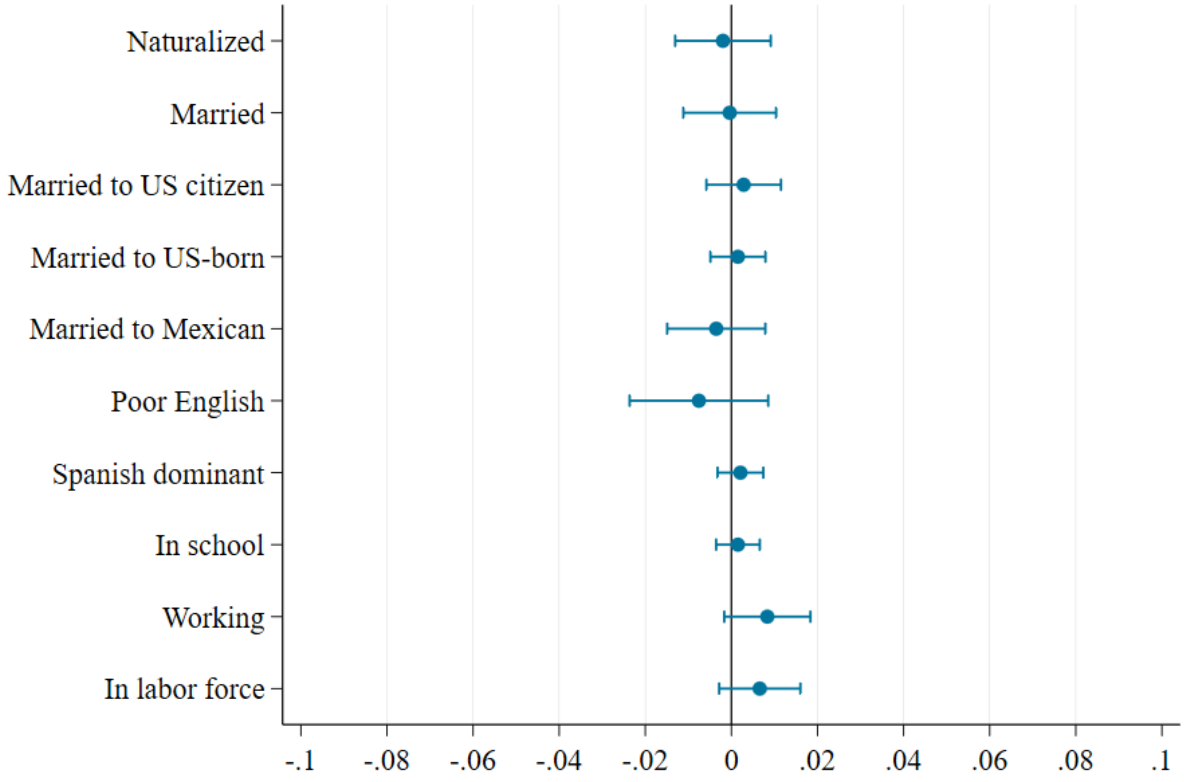
Notes: This figure shows the yearly trend in the average homicide rate per 100,000 across two group of municipios. The blue line represents the trend for municipios with any DTO presence between 2004 and 2006. The red line represents the trend for municipios with no DTO presence. The dashed vertical 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 crop 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 4. 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 specified in equation 4, 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 Mexicans who migrated between 2000 and 2006, within a balanced sample of commuting zones that have a Mexican population higher than 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 Mexicans who migrated between 2000 and 2006, 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.

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 Mexicans who migrated between 2000 and 2006, 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.

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 Mexicans who migrated between 2000 and 2006, 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.

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*	-0.027**
	(0.063)	(0.013)	(0.016)	(0.013)
Homicide Shock x US-born	-0.189***	0.000	-0.002	0.028***
	(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.

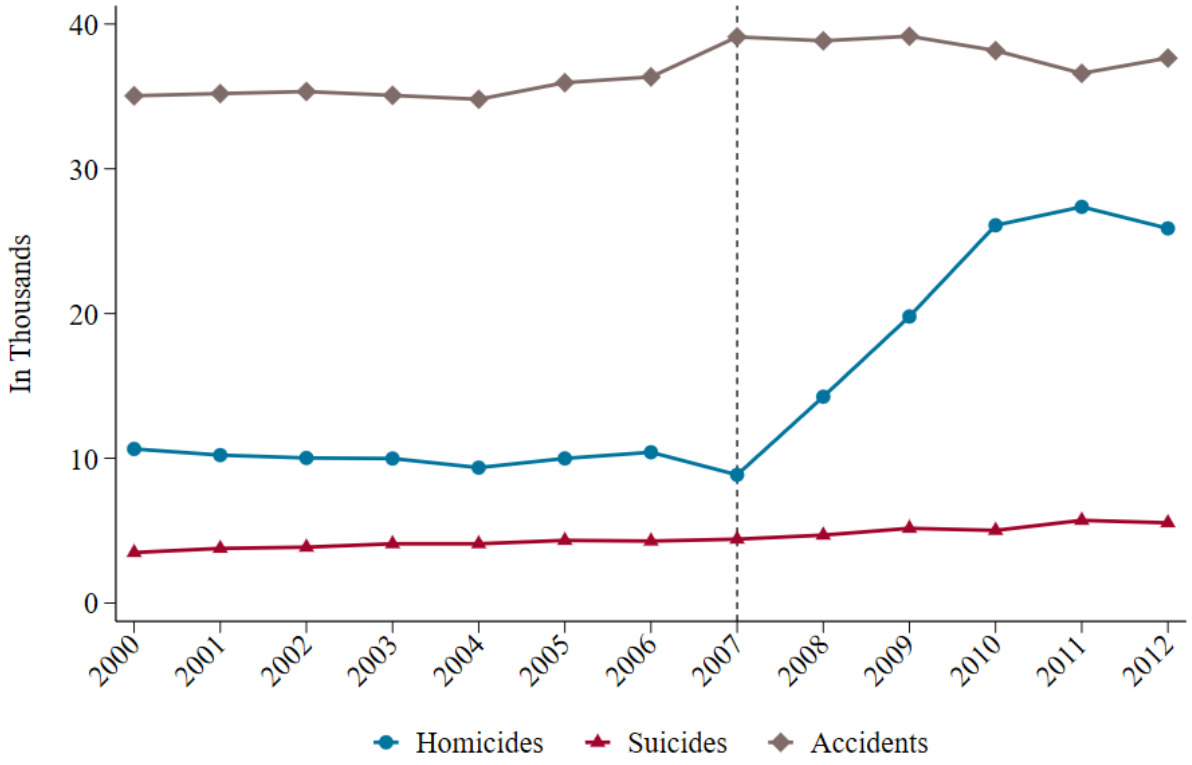
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

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 age, 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

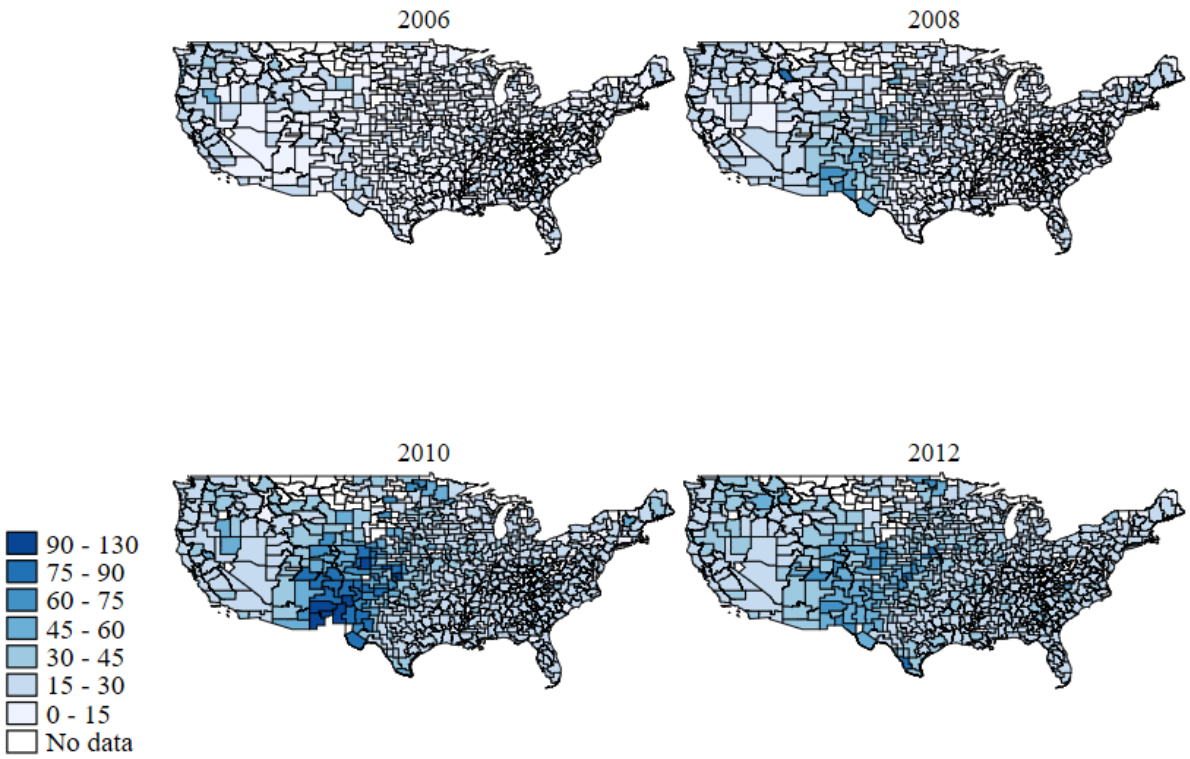
A Supplementary Figures and Tables

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



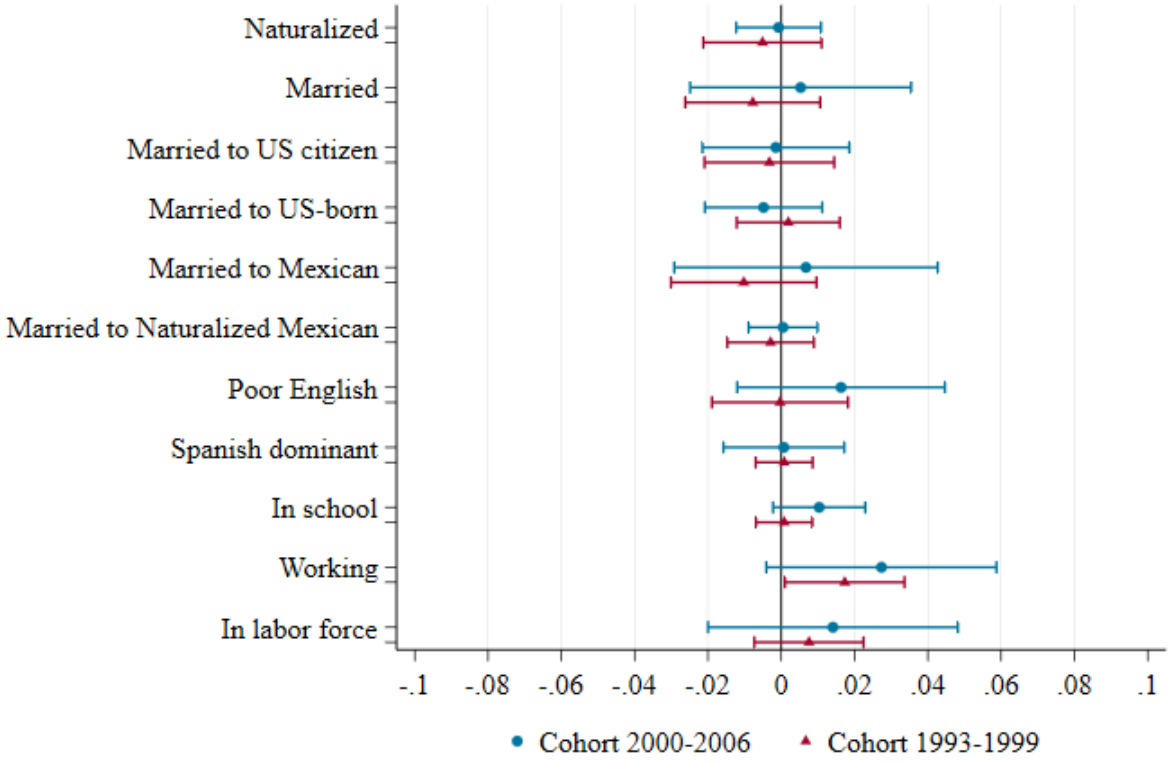
Notes: This figure displays the total number of deaths due to homicides (blue line), suicides (red line) and violent accidents (brown line) in Mexico by year. The dashed vertical line marks the start of the war on drugs by Calderón's administration in 2007. Data source: INEGI, 2000-2012.

Figure A2: Annual Homicide Shock in US Commuting Zones



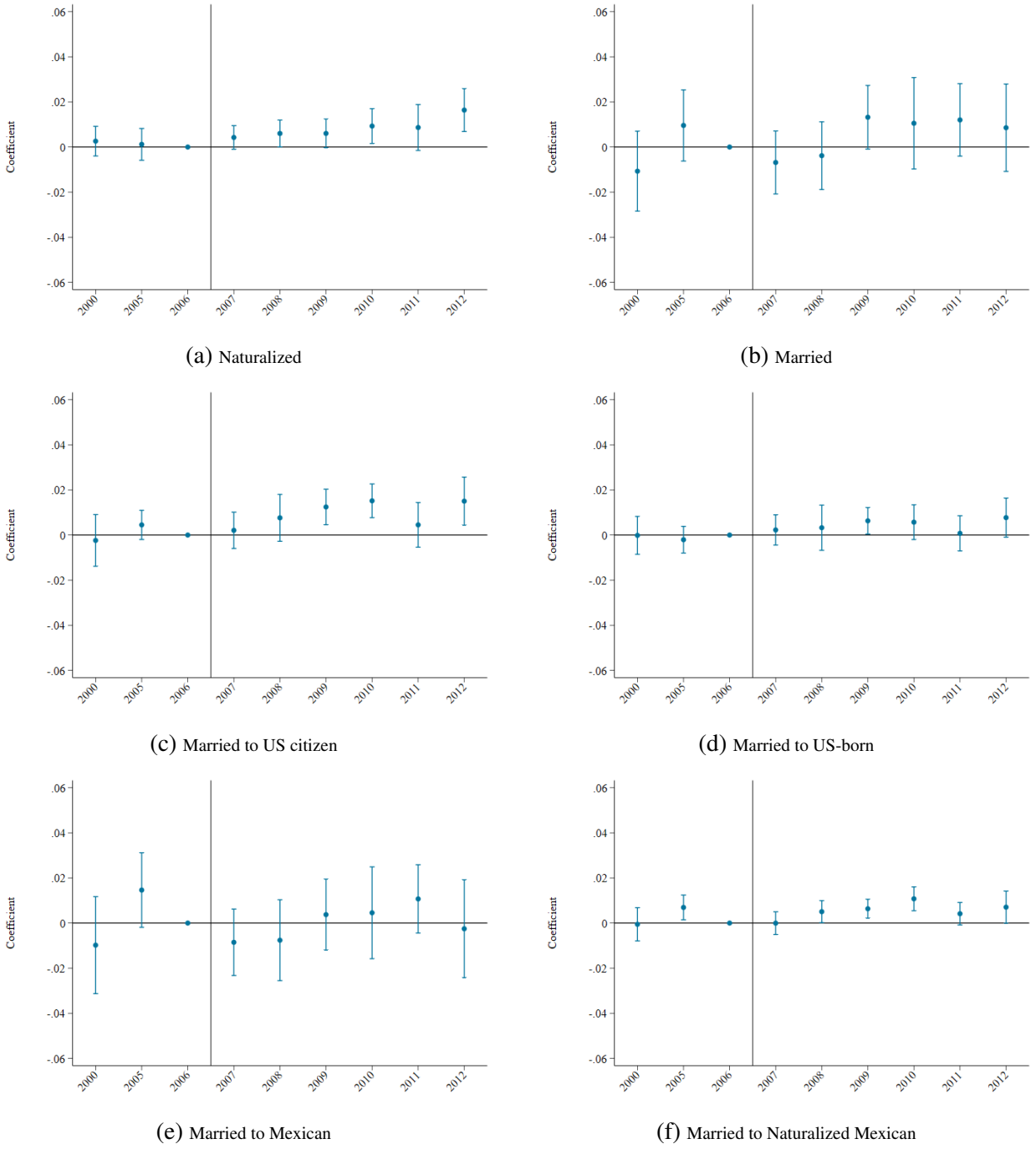
Notes: This figure displays maps of the distribution of the annual homicide shock across US commuting zones by year. The homicide shock is interpreted as the homicide rate per 100,000 persons in an "average" Mexican source municipio.

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 Mexican-born non-institutionalized individuals and to zones above the 50th percentile in Mexican population and balanced to match the main analysis.

Figure A4: Event-study Analysis



(a) Naturalized

(b) Married

(c) Married to US citizen

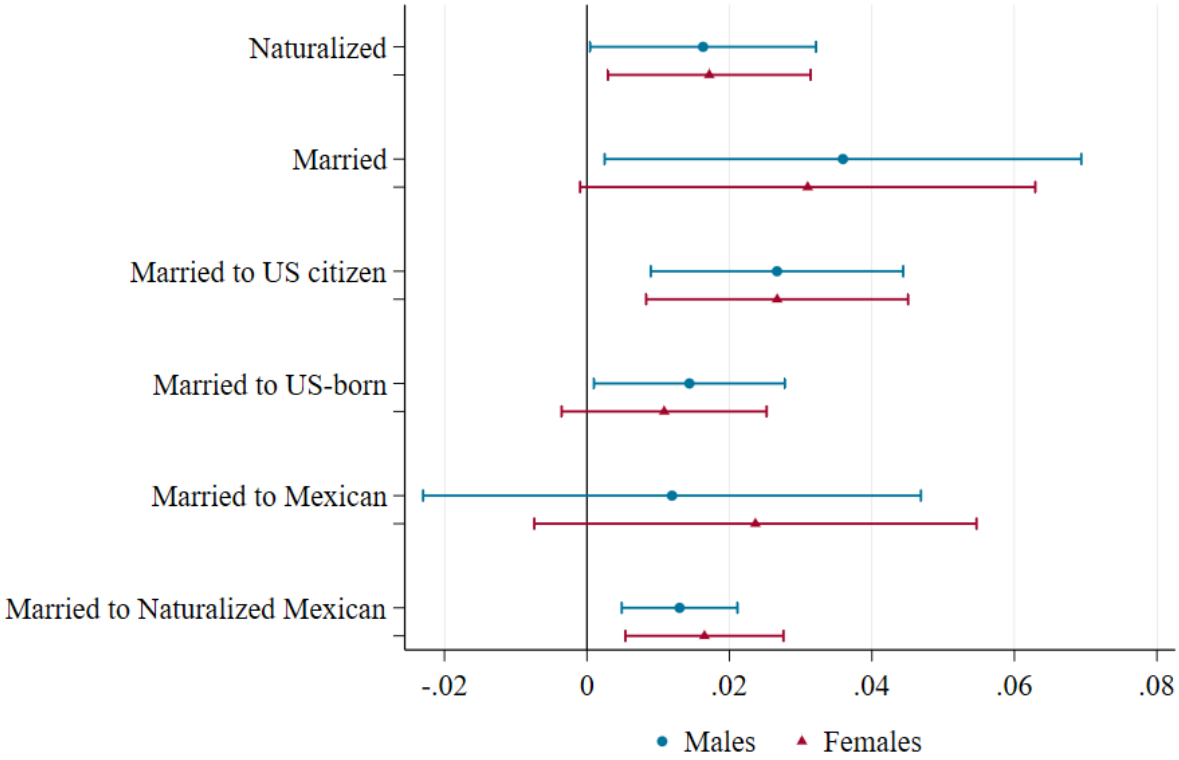
(d) Married to US-born

(e) Married to Mexican

(f) Married to Naturalized Mexican

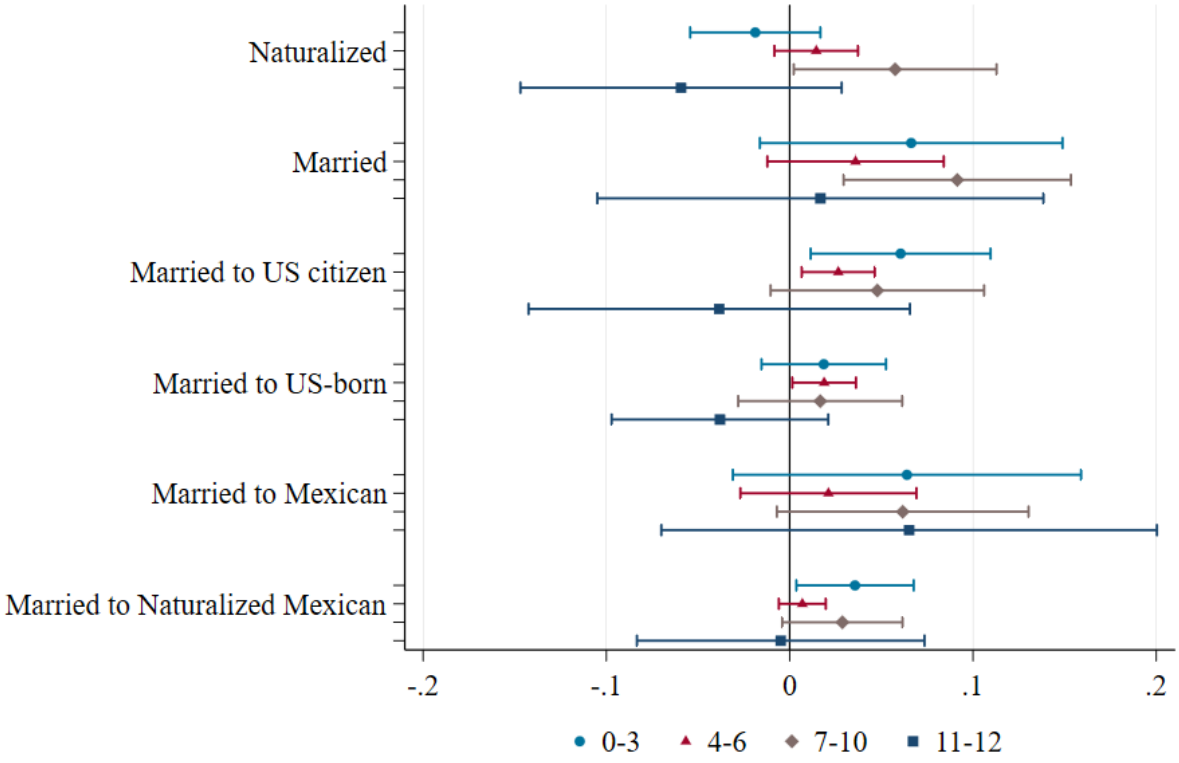
Notes: These figures report event-study estimates of the interaction between baseline DTO exposure in a commuting zone and year dummies, with 2006 as the reference year. Treatment intensity is defined as the baseline share of Mexican migrants in the CZ originating from municipios with a DTO presence, 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 Mexicans who migrated between 2000 and 2006, and to a balanced sample of commuting zones that have a Mexican population higher than the 50th percentile.

Figure A5: Heterogeneity Analysis by Sex



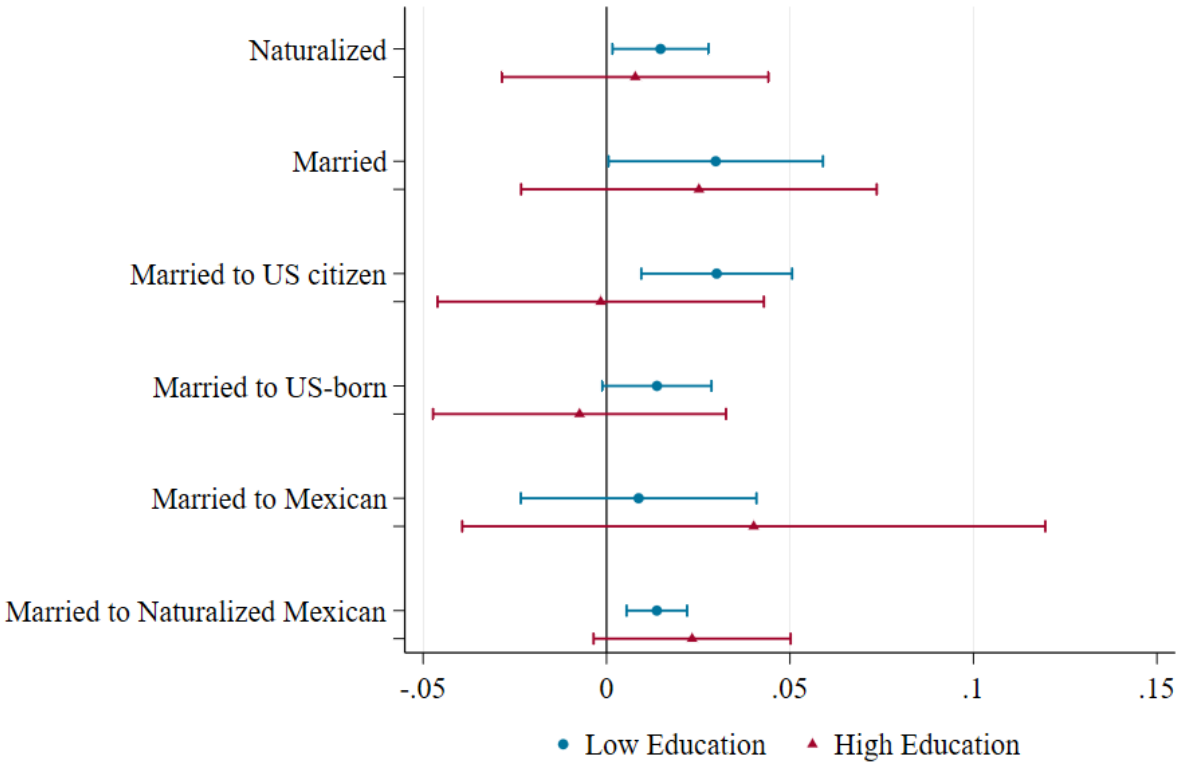
Notes: This figure plots the 2SLS estimates and the 95 percent confidence intervals of the differential effect of the homicide shock on the main outcomes by sex. Both the HS and the instrument are normalized to have mean zero and unit variance. In all specifications, controls include age, sex, educational 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 Mexicans who migrated between 2000 and 2006, and to a balanced sample of commuting zones that have a Mexican population higher than the 50th percentile.

Figure A6: 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 Mexicans who migrated between 2000 and 2006, and to a balanced sample of commuting zones that have a Mexican population higher than the 50th percentile.

Figure A7: 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 Mexicans who migrated between 2000 and 2006, and to a balanced sample of commuting zones that have a Mexican population higher than 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)
Years of Schooling	5.39	6.94	1.558***
	(1.25)	(1.30)	(0.218)
Employment Rate	0.46	0.50	0.043***
	(0.07)	(0.07)	(0.007)
Earned Income (Pesos)	829.60	1,613.11	783.516***
	(569.22)	(801.88)	(206.928)
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 baseline characteristics across Mexican municipios with and without Drug Trafficking Organization presence. 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 between 2004 and 2006, 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: 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 commuting zones that have a Mexican population above the 50th percentile and are balanced (available in every year between 2006 and 2012) to match the main analysis.

Table A4: 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 commuting zones that have a Mexican population above the 50th percentile and are balanced (available in every year between 2006 and 2012) to match the main analysis.

Table A5: 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 commuting zones that have a Mexican population above the 50th percentile and are balanced (available in every year between 2006 and 2012) to match the main analysis.

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 Mexicans who migrated between 2000 and 2006, 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.

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 Mexicans who migrated between 2000 and 2006, 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.

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 sample of analysis, consisting of working-age non-institutionalized Mexicans who migrated between 2000 and 2006. The sample is further restricted to a balanced set of commuting zones with a Mexican population higher than 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 Mexicans who migrated between 2000 and 2006, 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.

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 Mexican-born non-institutionalized individuals who arrived between 2000 and 2006, and to commuting zones above the 50th percentile in Mexican population and balanced to match the main analysis.

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 Mexicans who migrated between 2000 and 2006, and to a balanced sample of commuting zones that have a Mexican population higher than the 50th percentile.

Table A12: Robustness Checks I - Spillovers, Network Construction, 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
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	0.020**	0.042*	0.039***	0.021***	0.017	0.018***
	(0.009)	(0.022)	(0.011)	(0.008)	(0.020)	(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	20.75	20.75	20.89	20.89	20.89	20.89
S.D. HS	8.97	8.97	8.99	8.99	8.99	8.99
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
Panel G: Falsification Test, Sample of Central Americas						
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 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 Mexicans who migrated between 2000 and 2006, and to a balanced sample of commuting zones that have a Mexican population higher than the 50th percentile (except in Panel G). The baseline mean represents the outcomes' means in 2006. Panel A excludes border commuting zones (eleven). 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). Panel G presents a falsification test using working-age non-institutionalized Central Americans who migrated between 2000 and 2006.

Table A13: Robustness Checks II - Placebo Treatment

	(1) Naturalized	(2) Married	(3) Married to US citizen	(4) Married to US-born	(5) Married to Mexican	(6) Married to Naturalized Mexican
Placebo Homicide Shock	0.002	-0.024	-0.007	-0.008	-0.010	-0.003
	(0.020)	(0.039)	(0.022)	(0.019)	(0.040)	(0.015)
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	11.06	11.06	11.18	11.18	11.18	11.18
S.D. HS	10.37	10.37	10.38	10.38	10.38	10.38

Standard errors in parentheses.

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

Notes: This table presents the 2SLS estimates of the effect of a placebo homicide shock, constructed using network weights from municipios that send few or no migrants to each US commuting zone (bottom 20th percentile of network weights in 2006). These placebo network weights are used to build the instrument and the corresponding placebo homicide shock. Both the placebo 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. The sample is restricted to working-age non-institutionalized Mexicans who migrated between 2000 and 2006, and to a balanced sample of commuting zones that have a Mexican population higher than the 50th percentile.

Table A14: 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 IV	21.89	21.89	22.06	22.06	22.06	22.06
S.D. IV	12.09	12.09	12.18	12.18	12.18	12.18
	(1)	(2)	(3)	(4)	(5)	(6)
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 IV	21.89	21.89	22.06	22.06	22.06	22.06
S.D. IV	12.08	12.08	12.17	12.17	12.17	12.17
	(1)	(2)	(3)	(4)	(5)	(6)
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 IV	21.92	21.92	22.09	22.09	22.09	22.09
S.D. IV	12.08	12.08	12.17	12.17	12.17	12.17
	(1)	(2)	(3)	(4)	(5)	(6)
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 IV	22.04	22.04	22.21	22.21	22.21	22.21
S.D. IV	12.11	12.11	12.20	12.20	12.20	12.20
	(1)	(2)	(3)	(4)	(5)	(6)
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 IV	21.91	21.91	22.07	22.07	22.07	22.07
S.D. IV	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 IV	22.04	22.04	22.21	22.21	22.21	22.21
S.D. IV	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 A15: 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 Mexicans who migrated between 2000 and 2006, 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.

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	Yes	Yes
Year FE	Yes	Yes

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.

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.

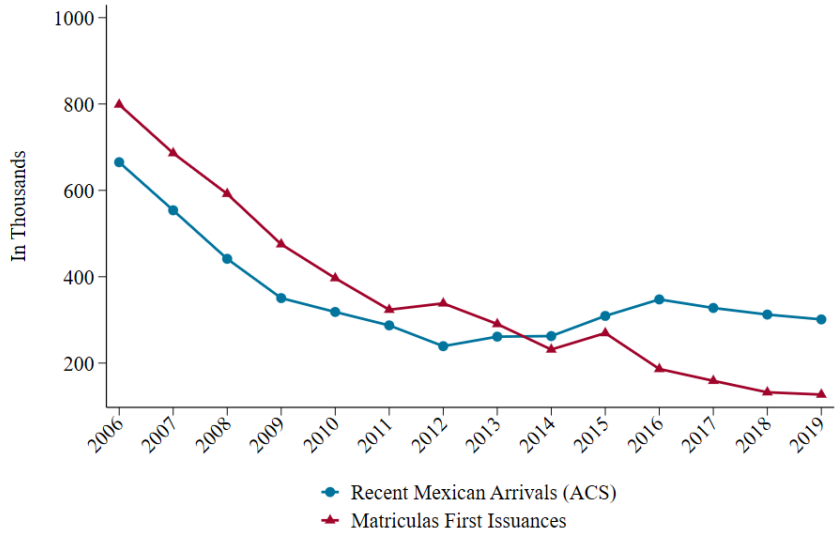
In Figure B1, I plot the yearly trend in first issuance Matrícula cards (in red) and recent Mexican arrivals obtained through the ACS (in blue). Between 2006 and 2012, the two trends track each other closely within a margin of 200,000 individuals. This gives confidence that the MCAS data capture broad 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.

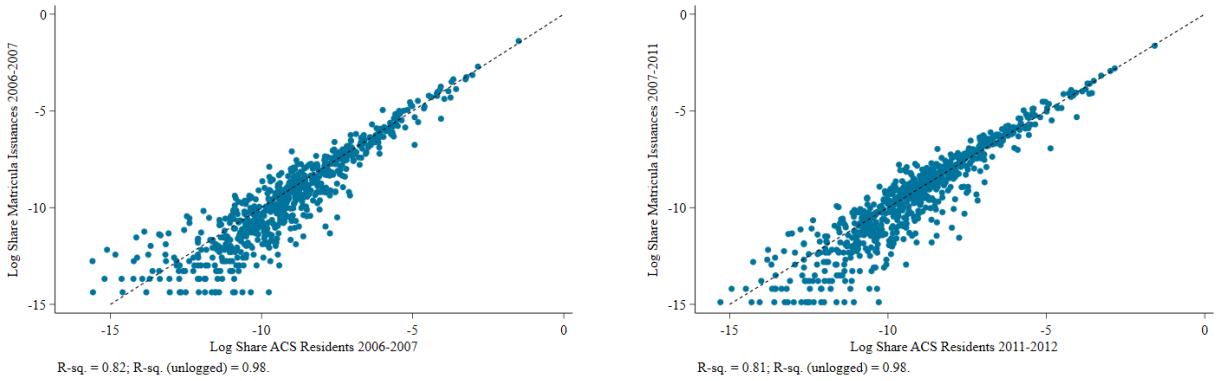
Taken together, this evidence suggests that MCAS provides a reliable picture of migrant networks. While coverage is particularly high among undocumented migrants, this does not appear to bias the overall geographic pattern of migration flows.

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.

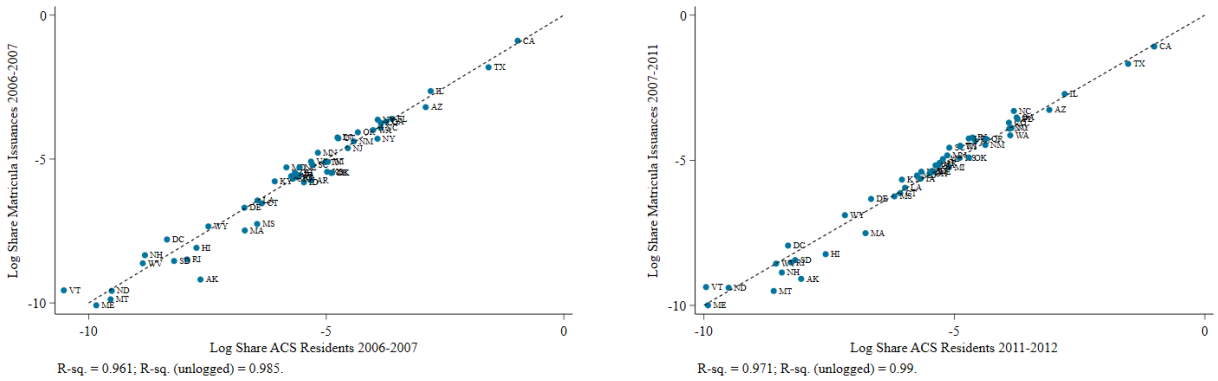
Figure B2: Distribution of Mexican Migrants across US Commuting Zones: MCAS vs. ACS



(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	-491.656	-18.877	-475.822	-6512.491	-626.400	-5873.298
	(634.546)	(82.424)	(557.823)	(5754.595)	(781.939)	(4988.835)
Observations	1582	1582	1582	1582	1582	1582
Mean Y - Baseline	3,615.872	635.088	2,964.761	3,615.872	635.088	2,964.761
Mean Y - Overall	16600.621	2950.311	13625.627	16600.621	2950.311	13625.627
Panel B: Unbalanced Sample						
Homicide Shock	-9078.539	-789.711	-7272.219	-9078.539	-789.711	-7272.219
	(6616.292)	(876.495)	(5737.897)	(6616.292)	(876.495)	(5737.897)
Observations	2415	2415	2415	2415	2415	2415
Mean Y - Baseline	3,905.910	648.928	3,069.133	3,905.910	648.928	3,069.133
Mean Y - Overall	19454.102	3148.586	14800.394	19454.102	3148.586	14800.394
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 Mexicans who migrated between 2000 and 2006, and to a balanced sample of commuting zones that have a Mexican population higher than 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 Mexicans who migrated between 2000 and 2006, 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.

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 (Appendix C.2) 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.

C.1 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.

C.2 Supplementary Data

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).