Organized Crime Dynamics and Violence Against Government Officials in Mexico

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Abstract

Mexican cartels have attacked or assassinated thousands of government officials. The literature contends that electoral incentives, political vulnerability, and government crackdowns account for these killings. We argue that the radical transformation of Mexican cartels and their dynamics starting in the mid-2000s play a fundamental role in explaining where and when criminal organizations use violence against government officials. Triangulating evidence from novel national and subnational datasets on criminal dynamics and violence against government officials and a series of fixed effects models, we find that criminal wars are a key driver of violence against government officials, that cartel geographic expansion sometimes leads to violence, larger cartels initially used this type of violence more but fragmentation led to smaller cartels also using this violence, and these attacks are most prevalent in territories with lucrative geographically-fixed illicit markets, particularly when cartels are well-established. Effects of political factors fade when accounting for these dynamics.

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1 Introduction

In 2001, a group of men dressed in black approached María de los Angeles Tamés Pérez, councilmember of the Atizapán de Zaragoza municipal government in the State of Mexico, in her car and opened fire (*Redacción* 2002). Authorities declared her dead by the impact of at least four bullets fired at no more than a meter distance. Investigations soon revealed that Tamés Pérez was planning on providing evidence to government authorities about bribes accepted by the mayor from drug traffickers. While violence against state officials by criminal organizations (COs), also known as "cartels" in Mexico, was practically unheard of in 2001, it has become surprisingly common: During the 2018 electoral cycle, cartels murdered over 150 mayors, mayoral candidates, and former mayors, making the homicide rate for this position greater than that of the general population (Calderón 2018). This alarming rise in a uniquely brazen form of political violence by cartels poses significant challenges to Mexico's democracy and rule of law.

This phenomenon is both distressing and underexplained. COs are economic actors that do not covet political power, and therefore do not seek to overthrow the government or establish monopoly or "de facto" control over territories vis-à-vis the state (Lessing 2017, 2021). Yet, recent scholarship highlights that COs cannot survive or operate without some degree of state protection, cooperation, or collusion (Arias 2017; Trejo and Ley 2021; Durán-Martínez 2017), making state protection essential for COs. Thus, COs obtaining protection from politicians is necessary. Under certain conditions, the pursuit to gain this protection can turn violent. Existing studies have identified three primary political factors that create the conditions for COs to violently target government officials – election cycles (Trejo and Ley 2021; Blume 2017; Daniele and Dipoppa 2017; Alesina et al. 2018), intergovernmental party politics (Trejo and Ley 2021), and government crackdowns (Lessing 2017). However, these explanations fall short in explaining the prevalence of violence against government officials in Mexico. First, despite powerful cartels operating in the country for decades and subnational democratic elections and intergovernmental party politics existing since the 1990s, violence

against government officials did not escalate until 2008. Second, if cartels were killing those politicians responsible for government crackdowns they would be targeting the state officials in charge of the crackdown. Thus, while the surge in killings in Mexico coincides with the start of the 2007 *federal* crackdown against cartels, 88% of political assassinations since 2000 have been of *local* politicians, those unrelated to the crackdown.[1]

We argue that the literature has overlooked a key factor as a potential explanation for this violence – the transformation of Mexico's criminal underworld over the past two decades. Mexico went from being ruled by a handful of large and powerful cartels that specialized in drug trafficking and operated in regions key to the drug trade, to a highly contested environment where dozens of cartels operate across the country and are involved in a diverse set of illicit activities. Although this evolution in criminal dynamics coincides with the increase in violence against government officials, this relationship has been largely overlooked by existing research. We thus pose the following question: what role do criminal dynamics have in explaining when and where COs assassinate government officials?

We claim that four key local criminal dynamics play a fundamental role in explaining when and where COs use violence against government officials – cartel wars, cartel geographic expansion, cartel fragmentation, and the structure of illicit markets. However, a key barrier to testing the effects of criminal dynamics has been the lack of data to capture this phenomenon. We overcome this shortcoming by constructing a series of datasets on criminal dynamics and assassinations of government officials. First, to measure violence against government officials, we create original datasets on all assassinated *politicians* in Mexico from 2000 to 2018 and all assassinated *government officials*[2] in the state of Guanajuato from 2000 to 2021. We additionally use the data from Trejo and Ley (2021) (we herein use "TL" when referring to this dataset) measuring lethal and non-lethal attacks against government officials, political candidates, and party activists between 2007 and 2011. Second,

[1] See Data section for details.

[2] "Government officials" includes elected politicians, party members, and public servants. It excludes law enforcement personnel.

to measure local criminal dynamics, we use municipal-level data on the geographic presence of cartels between 2000 to 2018 from the Mapping Criminal Organizations in Mexico (MCO) project (Signoret et al. 2021; Sobrino 2023) and fine-grained datasets on cartels in the state of Guanajuato from Alcocer (2022) that measures local criminal dynamics in much greater detail.

To test our hypotheses, we triangulate evidence from the TL dataset, our extended national dataset, and the Guanajuato dataset. Results from a series of two-way fixed effects regressions find that criminal wars *at the local level* drive violence against government officials, particularly when at least one of the cartels is well-established in the territory they are fighting over. We find some evidence that cartels entering new territories is associated with more violence against government officials in the short term. Moreover, while this type of violence was primarily a strategy used by larger cartels soon after the 2007 government crackdown, smaller fragmented cartels seem to have adopted the strategy after 2010 when they began proliferating. It is also a strategy used in territories where cartels are well established rather than where they have a weak presence. Finally, violence against government officials is more prevalent in territories with lucrative and geographically-fixed illicit markets.

The main contribution of this article is twofold – theoretical and empirical. First, we explicitly theorize the role of criminal dynamics in the use of violence against government officials. While existing studies highlight that criminal wars can impact the use of violence, we present new dynamics, including criminal expansion, criminal fragmentation, and the structure of criminal markets, and theorize how they matter for understanding political violence by COs. Second, we contribute empirically by using novel data on criminal dynamics and political assassinations that both extends the time periods explored in existing studies and quantifies previously unmeasured concepts. Ultimately, these data innovations provide rigorous empirical evidence analyzing the effects of organized crime dynamics on violence against government officials.

Our results contribute to the growing literature on violence by COs against politicians

(Rios 2012; Blume 2017; Daniele and Dipoppa 2017; Alesina et al. 2018; Trejo and Ley 2021), law enforcement officials (Lessing 2017), and journalists (Holland and Rios 2017; Bartman 2018; Carey and Gohdes 2021). It also presents a clear complement to the literature on other non-state actors employing violence against state actors (e.g., Dal Bó and Di Tella 2003; Dal Bó et al. 2006). More broadly, this article speaks to scholarship on the relations between COs and the state. While our focus is on the use of violence, this is only one facet of the relations COs and states have been found to maintain across countries (e.g., Lessing 2021; Barnes 2017; Blume 2022; Cruz 2016; Bailey and Taylor 2009; Albarracin 2018).

The article proceeds as follows. We first discuss existing explanations and underscore their limited explanatory power. We then introduce our theory of criminal dynamics. The following section introduces and discusses the data on violence against state officials and criminal dynamics. The article then turns to the empirical strategy and presenting the main results, with a section dedicated to interpreting the results from the different datasets. We conclude by discussing some of the key implications of our findings.

2 Existing Explanations

The increase in violence against government officials by COs over the last two decades in Mexico is both alarming and puzzling given existing explanations. Not only do COs not seek political power (Lessing 2017), but the use of violence against government officials in Mexico is a relatively new phenomenon despite powerful cartels operating in the country for decades. Why, then, would cartels begin perpetrating violent attacks against government officials and why has the prevalence of these attacks increased? Existing literature identifies three political factors that create incentives for COs to use violence against government officials: electoral cycles, political vulnerability, and government crackdowns.

2.1 Election Cycles

Election cycles can present key periods of political opportunity where COs can use coercion to their benefit. For example, studies on the mafia in Italy find that COs can either use coercion before elections to influence electoral outcomes in favor of their preferred candidate (Alesina et al. 2018) or following elections to influence the behavior of elected politicians (Daniele and Dipoppa 2017). In Mexico, anecdotal accounts suggest that both of these motives may be present as well. For example, during the 2021 pre-electoral campaign period, unidentified attackers shot Abel Murrieta, an opposition candidate for mayor of Ciudad Obregon in the state of Sonora, allegedly for pledging to "clean up" the municipality of drug crimes (Blust 2021). Alternatively, in a campaign to control town halls and local resources in the town of Temixco in the state of Guerrero, members of Los Rojos killed mayor Gisela Mota the day after she was elected in 2016 (Lakhani 2016).

However, distinguishing between the pre- and post-electoral explanations is not straightforward. We may observe COs use violence against a recently elected politician, though this may be a result of unsuccessful attempts at influencing political selection before the elections, for example, through failed pre-election assassination attempts. Empirically, it is difficult untangling the two motivations, and they are likely both present. More generally, whether it is pre- or post-election, Trejo and Ley (2021) find that cartel attacks in Mexico intensify around subnational election cycles and argue that it is a result of COs seeking state capture. That is, cartels exploit election periods to establish criminal governance and entrench their power.

2.2 Political Vulnerability

A leading explanation for the proliferation of violence against government officials by COs in Mexico is that the decentralization and political polarization prompted by democratization during the 1990s drove party alternation, making security coordination across levels of government increasingly difficult and politicized. These factors ultimately left certain mu-

nicipalities vulnerable to organized crime when there were no co-partisans in higher levels of government to protect them (Rios 2015; Shirk and Wallman 2015; Trejo and Ley 2020; Blume 2017; Durán-Martínez 2017).

Specifically, Trejo and Ley (2016, 2020) argue that under the rule of the conservative PAN party during Calderón's presidency (2006-2012), attacks against politicians by criminal groups were more likely when local politicians were members of a rival party, particularly the leftist PRD party. The authors contend that the ruling PAN party had political incentives to provide effective protection to municipalities ruled by co-partisans while allowing violence to flare up in municipalities with mayors from rival parties. Thus, federal forces left local politicians unprotected when they were from rival political parties, thereby making them vulnerable to attacks as COs sought to take over local resources and establish criminal governance. Blume (2017) similarly argues that political vulnerability explains CO violence, though instead contends that party polarization between state governments and municipal governments – as opposed to federal and municipal polarization – may have left municipalities from opposition parties vulnerable to attacks.

These arguments suggest that municipalities controlled by mayors that are co-partisans with their governor or the president are better protected than municipalities ruled by rival party members. Therefore, protected mayors may prove more difficult to attack, while municipalities left vulnerable by higher levels of government could prove easier to attack.

2.3 Government Crackdowns

In December 2006, President Calderón declared war against drug cartels and began deploying the military to combat these organizations. As Trejo and Ley (2020) show, federal and state forces, not municipal police, spearheaded this effort. Using evidence from Mexico, Brazil, and Colombia, Lessing (2017) argues that unconditional government crackdowns may cause COs to use violence against the state in order to fight back and reduce the intensity of the crackdown. Given this theory, we should expect to see Mexican cartels targeting primarily

federal- and state-level politicians. Yet, the vast majority of assassinated politicians in Mexico are *local* officials with no say in the creation or implementation of the top-down crackdown. Thus, while the crackdown in Mexico may have been a factor in driving or accelerating macro-level changes in cartels and their use of violence, it falls short in explaining both *local* dynamics and the systematic killing of *local* politicians.

3 Organized Crime Dynamics and Violence Against Politicians

In this study, we highlight a factor that has been overlooked in existing studies – the drastic transformation of Mexico's criminal underworld, which coincided temporally with the increase in cartel violence against government officials. Mexico went from having a handful of powerful drug trafficking organizations that mainly operated in regions key to the drug trade in the early 2000s, to a highly fragmented and contested environment where dozens of COs involved in various illicit markets operate across the country.

While the literature has commonly argued that wars between COs help explain the use of violence against the state, we claim that criminal dynamics more broadly play a fundamental role in explaining why cartels target government officials. By criminal dynamics, we mean how the presence, structure, evolution, and relationships of groups may influence cartels' propensity to target government officials. Specifically, we argue that four key developments – criminal wars, criminal expansion, criminal fragmentation, and criminal market structure – shape the incentives for COs to use violence against the state.

3.1 Criminal Wars

The criminal dynamic that scholars *have* highlighted as playing an important role in explaining violence against the state is criminal wars (Rios 2012; Blume 2017; Huerta 2020; Calderón 2018). Rios (2012), for example, notes the correlation between CO-related homi-

cides and the murder of 33 mayors between 2007 and 2011, though provides no theory to explain this empirical observation. Blume (2017), on the other hand, argues that a primary reason for politicians falling victim to CO-perpetrated violence is when they cooperate with one cartel, thus making them vulnerable to being targeted by its rivals. Huerta (2020) finds some evidence that this is likely the case in the states of Puebla and Guerrero. However, existing studies cannot explain why Mexican cartels did not use systematic violence against government officials until the mid-2000s when criminal wars between the major drug cartels in Mexico began in the 1990s (Trejo and Ley 2020).

We build on existing theories by proposing that three other factors changed the incentives of criminal wars and resulted in COs increasingly targeting government officials, especially local politicians. First, democratization through the 1990s and 2000s made protection pacts that COs forged with federal and state authorities uncertain, especially when there was party turnover. To counteract this uncertainty over high-level state protection, cartels may have increasingly turned to local authorities for protection. Criminal wars therefore meant cartels began fighting over local state protection by local government officials. Second, cartels began to fragment increasingly around 2010, leading to a growing number of cartels. Fragmentation not only resulted in an increasing number of wars between cartels, but also between smaller, more localized yet powerful cartels that relied on local government protection. The incentives of criminal wars that drive them to use violence against the state may have been especially acute for these smaller cartels that depend heavily on protection from local state officials. Third, cartels began diversifying beyond drug trafficking in 2007 (Alcocer 2022), and many of the activities they began to undertake were more local in nature such as extorting local businesses, drug dealing to local consumers, property theft, and stealing oil from pipelines. Criminal wars over activities regulated by local government officials as opposed to state or federal authorities likely made local officials more important targets.

The expectation is thus that we should observe more violence in territories where two or more cartels are actively contesting a territory.

Hypothesis 1 (H1): *Territories actively contested by two or more COs will experience more violence against politicians.*

3.2 Criminal Expansion

Another major transformation in Mexico's underworld over the past 15 years is that Mexican cartels went from operating in about 7% of the country's municipalities prior to 2007 to over 34% of municipalities by 2018.[3] This dramatic geographic expansion has been shown to have been partially driven by diversification (Alcocer 2022), increased demand for opioids in the United States (Signoret et al. 2021), and criminal wars (Trejo and Ley 2020). Consequently, COs extended their presence to an ever-increasing percentage of the Mexican territory.

The expansion of organized crime meant that an increasing number of political jurisdictions began to experience cartel incursions. This also meant that cartels began entering states and municipalities where they had not previously operated and thus did not have pre-existing protection pacts with government officials. Entering new territories, especially when expanding to across state lines beyond a captured governor's protection, likely made capturing local governments especially valuable. State-level agreements are likely more costly, harder to negotiate, and require more resources and time than capturing local politicians. Moreover, the political class in territories where cartels had never operated were likely unaccustomed to dealing with these groups. In these territories, some government officials likely refuse to work for cartels, or they might agree and later back out, betray them, or fall out of favor. Thus, cartel expansion into new territories where they were not well established likely made local politicians especially vulnerable to attacks.

Additionally, COs also began to expand to territories controlled by rival organizations. Expanding into territories where a rival CO had a protection pact with state level politicians likely made local level protection valuable to the invading CO. Alternatively, COs likely also enter territories where a rival CO has protection from local state officials. In these cases,

[3]See Data section for details.

local state officials may become key targets for incumbent and invading COs, pushing cartels to kill state officials in territories that experience new CO presence.

Hypothesis 2 (H2): *COs are more likely to kill government officials in territories where they have recently expanded.*

3.3 Criminal Fragmentation

Following the breakup of the Guadalajara Cartel in the 1980s, a handful of powerful COs dominated the Mexican underworld until 2006. However, starting in late 2006 and increasingly after 2009, the large Mexican drug cartels began to fragment into an ever-increasing number of COs. Driven largely by the government's kingpin strategy that intensified following the 2007 crackdown on cartels (Calderón et al. 2015; Phillips 2015; Atuesta and Ponce 2017), cartel fragmentation resulted in the proliferation of at least 70 powerful organizations by 2018 (Signoret et al. 2021).

Blume (2017) finds that assassinations are more likely in Mexican states where there is criminal fragmentation, implying that the pluralization of COs in recent years has created the conditions for political assassinations. However, the author attributes the mechanisms to territories being contested by an increasing number of cartels; that is, to the logic of criminal wars. We instead propose that criminal fragmentation, beyond fostering an increasing number of criminal conflicts, may help explain political violence independently of criminal wars because it created different *types* of cartels: large cartels with significant power and smaller, more localized cartels with fewer financial and coercive capabilities. We argue that differences in capabilities may shape the strategic behavior of COs by constraining their possible actions, and consequently, influence their propensity to use violence against government officials.

However, our theoretical priors about the relation between cartel "size" and their use of violence are uncertain. For one, small cartels may not have the financial means to capture government officials through bribes, especially state and federal officials, and may thus have

to rely on local politicians and firepower when seeking political protection. This would make smaller cartels more prone to violence. At the same time, large cartels can likely rely on state and federal protection more frequently and have more coercive capabilities and financial resources, meaning that larger COs can more credibly threaten agents of the state, reducing their need to use violence.[4] Yet, it could also be the case that large cartels with greater coercive capacity could more easily be able to kill politicians and maintain impunity due to their capabilities to evade, bribe, or intimidate state enforcement, including law enforcement or judicial agencies. Smaller cartels could also be more cautious when contemplating the use of violence because they have fewer capabilities to deal with the reaction that such violence may cause from state forces or the military.

Hypothesis 3 (H3): *Small, more localized COs are more likely to kill politicians than larger COs.*

3.4 Criminal Markets

A final dynamic that may shed light on where we see political assassinations is the type of market that cartels are involved in. While Mexico's underworld was historically composed of specialized drug trafficking organizations, over the past two decades they have diversified and entered new markets such as extortion, kidnapping, drug dealing, oil theft, migrant smuggling and trafficking, looting mines, natural gas theft, and illegal logging, among others (Alcocer 2022).

Prominent research in conflict studies explore how lootable versus non-lootable resources influences civil war violence such as conflict onset (Collier and Hoeffler 1998; Ross 2004a,b), third party intervention (Findley and Marineau 2015), duration and intensity (Fearon 2004; Ross 2004a,b), and conflict resolution (Humphreys 2005). Albarracin (2018) extends the logic

[4]Blume (2017) offers a different interpretation by arguing that COs that emerged during the authoritarian period relied on the corporativist model for protection from the PRI party, making them less prone to violence than newer COs. Yet, this explanation does not explain the turn to the local, and overlooks that new COs were often not "new" but rather a result of fragmentation, that is, members of the "older" cartels breaking off and establishing their own independent cartels.

of how lootable versus non-lootable resources impacts violence by arguing that the type of illicit activities COs are involved in shape their relationship with the state. While this author differentiates how CO involvement in extractive or non-extractive activities shapes strategies to influence voter behavior, we extend the logic to argue that valuable and geographically-fixed markets shape incentives to use violence against politicians.

More specifically, we argue that some of the very lucrative activities cartels are involved in are more geographically restricted and entail needing to control and hold very specific territories – including U.S. border crossings, ports, municipalities with oil pipelines, and drug cultivating regions. This creates incentives for cartels to defend them at all costs. Alternatively, less geographically-restrictive activities, such as drug trafficking routes, extortion, theft, kidnapping, and drug dealing, can be perpetrated nearly anywhere and thus do not create incentives for cartels to control territories and obtain and maintain state protection to the same degree. That is, if cartels lose state protection or face intense competition from a rival cartel in a territory without geographically-fixed lucrative markets, they can simply move and perpetrate these activities in other territories. However, if the lucrative market necessitates the control of a specific territory, cartels may face incentives to utilize violence to gain and retain state protection in that specific territory.

Hypothesis 4 (H4): *Territories with valuable and geographically-fixed markets are likely to experience more violence against politicians than territories with geographically-flexible markets.*

4 Data

A key limitation of existing studies is the lack of data on COs and criminal dynamics, which has led scholars to rely on proxy or aggregated measures of criminal dynamics. For example, Calderón (2018) relies on state-level measures when defining cartel pluralization; similarly, Blume (2017) relies on highly aggregated data on cartel presence at the state level that does

not capture local dynamics. Other studies do not use data on cartel presence or dynamics and instead rely on proxy measures, such as approximating criminal competition with drug-related homicides (Huerta 2020; Trejo and Ley 2021). Finally, others have analyzed political assassinations in 2017-2018 using municipal-level data on cartel presence from 2010 (Huerta 2020).

While these measures are justifiable given data constraints, they do not directly measure various criminal dynamics and, for those that do use CO data, do not measure them at the local level or in the appropriate time period. Thus, beyond proposing that criminal dynamics matter for understanding political violence, this article makes an empirical contribution to the study of political violence by using local-level data on cartel dynamics in Mexican municipalities.

Given the novelty of the topic and the data, we triangulate evidence from multiple datasets to gain leverage over the concepts and measures of interest. For our dependent variable, violence against government officials, we use three different datasets on political violence: (1) high-profile attacks against government officials between 2007 and 2011 from Trejo and Ley (2021); (2) a original data on assassinated politicians between 2000 and 2018; and (3) novel data on all assassinated government officials from the state of Guanajuato between 2000 and 2021. For criminal dynamics, our independent variable, we use two different datasets: (1) data on cartel presence at the municipal level for all of Mexico from the MCO project (Signoret et al. 2021; Sobrino 2023); and (2) a detailed hand-coded data on cartel dynamics in the state of Guanajuato. We select this approach because each dataset has its strengths and limitations, and therefore results from analyzing all three complement each other and provide more rigorous and robust results.

We chose to focus our subnational analysis on Guanajuato because we believe it provides a good case to examine criminal dynamics. First, historically the state had minimal cartel presence, but since 2008 has become a highly contested territory between both large and more localized COs, some that have entered from neighboring states. It also used to have

practically no violence against state officials but has recently experienced a substantial increase. Moreover, the most coveted illicit market in Guanajuato is oil theft from pipelines, a very lucrative but geographically-fixed market.

4.1 Dependent Variable: Violence Against Government Officials

Our dependent variable is *violence against government officials*. We use three separate datasets to gain leverage on this variable, including an existing dataset on high-profile attacks from 2007 to 2011 (Trejo and Ley 2021), an original dataset on political assassinations covering all municipalities from 2000 to 2018, and a more fine-grained original dataset on high-profile assassinations in the state of Guanajuato from 2000 to 2021. To preview, plots in row (A) of Figure 1 use our original data to show the temporal distribution of murders by level of government (municipal, state, and federal) in all Mexico from 2000 to 2018 and in Guanajuato from 2000 to 2021, and plots in row (B) show the geographic distribution of these assassinations.

4.1.1 High-Profile Attacks, 2007–2011

We first use the TL data that measures attacks (e.g., murders, kidnappings, and public threats) against government officials, political candidates, and party activists between 2007 and 2011 (Trejo and Ley 2021). A particular strength of this data is that it includes assassinations, successful attacks,[5] and public threats, which captures different forms of political violence by cartels. As TL highlight, using only murders undercounts the actual prevalence of violence.

At the same time, this data faces at least three limitations. First, the data is temporally and geographically limited, covering only 81% of Mexico's municipalities and five years, from 2007 to 2011. As can be seen in Figure 1, violence against politicians starts prior to 2007

[5]The authors only include reported attacks that resulted in: "(a) candidates withdrawing from the election, (b) parties being unable to put forth candidates, or (c) public authorities resigning to protect their lives."

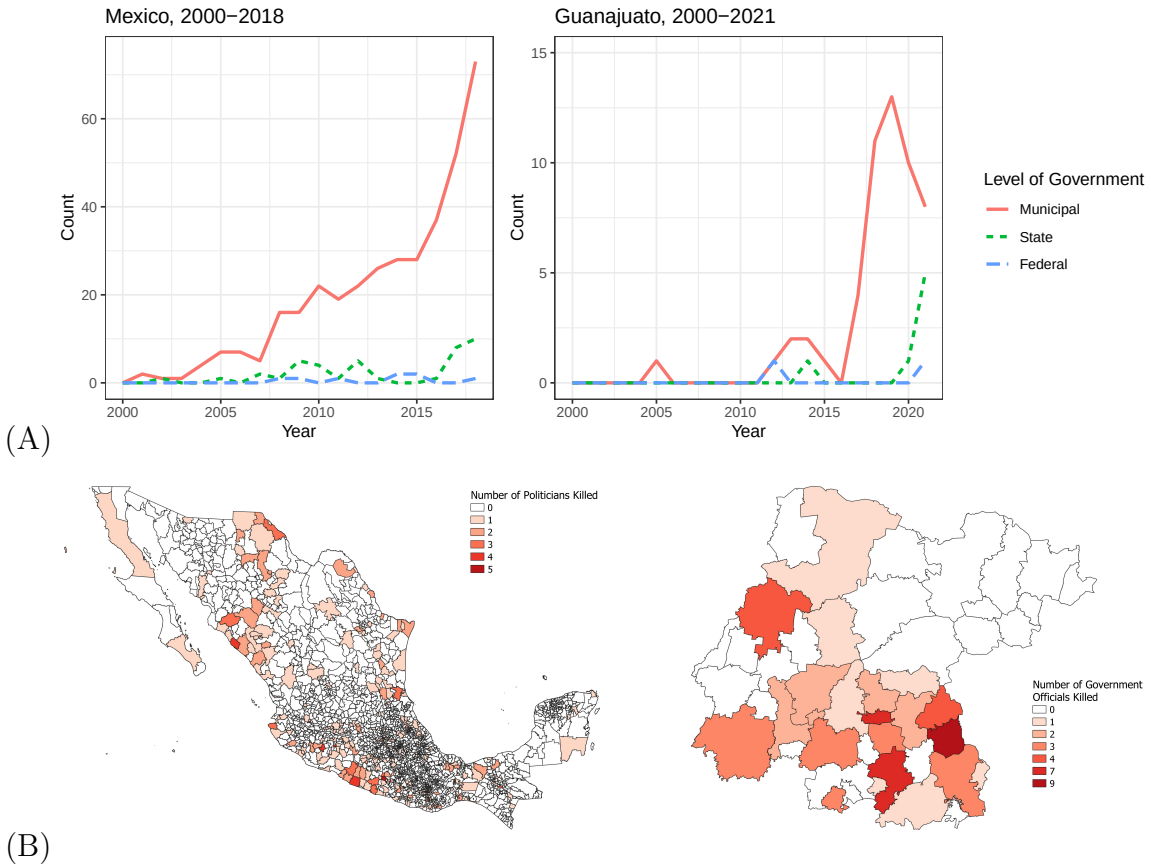

Figure 1: (A) Number of political assassinations by level of government. Assassination of politicians in all Mexico, 2000–2018 (left) and government officials in Guanajuato, 2000-2021 (right). (B) Geographic distribution of political assassinations. Assassination of politicians in Mexico, 2000–2018 (left) and government officials in Guanajuato, 2000-2021 (right).

and increases substantially after 2011. Second, measuring threats and attacks from national and regional newspapers, as TL do, may result in measurement bias due to many threats or attacks not being reported in these outlets. This could be, for example, because cartels influence news reporting (Díaz-Cerveró et al. 2022; De León Vázquez and González Macías 2020; Dorff et al. 2023), many attacks and threats are private and never disclosed or reported, only certain attacks or threats make regional or national newspapers, or certain cartels being more prone to use visible attacks and threats. Third, and of particular concern, this measure may be prone to endogeneity concerns if the bias in media coverage of threats and attacks is correlated with key explanatory variables. For example, Trejo and Ley (2016) claim that the PAN party, which held the presidency during the time period examined by TL, had

incentives to conceal attacks and threats occurring in municipalities with PAN mayors and expose attacks in municipalities ruled by their rivals for political reasons. If this is true, then the outcome measure would be endogenous and result in biased regression coefficients.

4.1.2 Political Assassinations, 2000–2018

To mitigate some concerns from the TL data, we also use original national-level data on assassinated politicians between 2000 to 2018.[6] Specifically, this dataset includes all murdered politicians that have run for or held elected office at any level of government in Mexico from 2000 to 2018, including federal legislators, state legislators, governors, mayors, and municipal councilmembers. The dataset includes 466 documented assassinations and information on: name of politician, position held or running for, party affiliation, date of assassination, municipality where the assassination occurred, municipality where they worked,[7] and a brief description of the assassination. Like TL, we only include assassinations that had indications that cartels may have been involved. These indications include the use of high caliber weapons, dozens of bullets being used, ambushes, multiple armed men, and had previously been linked to, threatened or attacked by cartels, among others. Due to a lack of information on many of the assassinations, we created two measures: a regular measure and a more conservative measure that required a higher degree of certainty that an assassination was linked to cartels. Main results use the more conservative measure ($n = 414$), results using the regular measure ($n = 436$) are included in the Appendix. All results hold and are consistent. Figure 2 presents the distribution of assassinated officials based on party affiliation and position.

This sample has three main strengths – it significantly extends the five years TL explore by covering 19 years in total, it accounts for all Mexican municipalities, and it only measures assassinations to avoid the potential measurement bias that may be present in TL. However,

[6] See Appendix for details about how the data was collected.

[7] Some local politicians are assassinated in a municipality where they did not run for or held office. In the main results we assume politicians were killed due to where they worked. In the Appendix we include results using the place where they were killed instead. All results hold and are consistent.

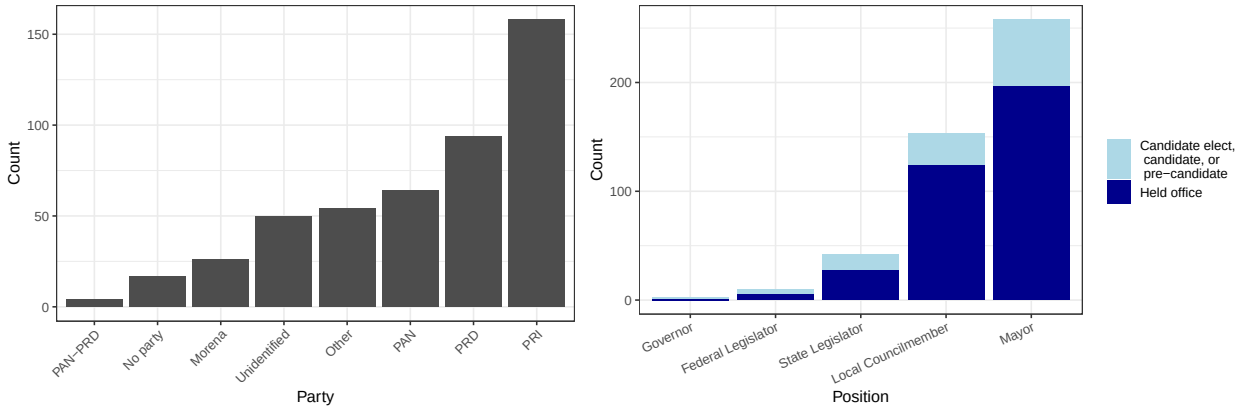

Figure 2: Political assassinations of elected officials in Mexico between 2000-2018, by party (left) and position (left). For presentational simplicity, we include the four primary national parties (PAN, PRD, PRI, and Morena) and group other parties. Some parties were not identified.

it does have an important limitation highlighted by TL – it only includes murders and not other forms of violence. Nevertheless, using only assassinations is standard in the literature on the assassinations of politicians (Rios 2012; Blume 2017; Daniele and Dipoppa 2017; Alesina et al. 2018), law enforcement officials (Lessing 2017), and journalists (Holland and Rios 2017; Bartman 2018; Carey and Gohdes 2021). Additionally, it only measures the assassinations of politicians in or running for elected office and excludes party activists or other government officials.

4.1.3 High-Profile Assassinations in Guanajuato, 2000–2021

Finally, we focus in on the state of Guanajuato and use novel data on all assassinated government officials, including elected politicians, party members, and public servants[8] in the state between 2000 to 2021.[9] The dataset includes 64 assassinations with information on: victim name, date of killing, political party, position (e.g., mayor, councilmember, state legislator, governor, or federal legislator), whether they were candidates or in office, past political positions, the municipality in which they were killed, and whether a CO committed the murder.

[8]This data does not include law enforcement officers.
[9]See Appendix for details about how the data was collected.

This data offers two primary strengths vis-á-vis the other two samples. First, like the TL sample, it includes the assassinations of all government officials, not only those in elected positions. Second, it does not suffer from the potential measurement bias that the TL sample does due to the rigorous data collection strategy. However, its most notable limitation is that it is geographically restricted to the 46 municipalities in the state of Guanajuato.

4.2 Independent Variable: Criminal Dynamics

Our independent variable is *criminal dynamics*, which includes criminal wars, criminal expansion, criminal fragmentation, and criminal markets. We rely on two datasets on COs in Mexico to measure criminal wars, expansion, and fragmentation, and geographic data to identify territories with lucrative illicit markets. Figure 3 shows the extent of evolving criminal dynamics in Mexico and Guanajuato by mapping the geographic distribution of cartels across time.

4.2.1 Criminal Dynamics in Mexico

First, we use the data from the MCO project (Signoret et al. 2021; Sobrino 2023) on the geolocation of over 40 COs in Mexico between 2000 and 2018. This panel dataset tracks each cartel and identifies which municipalities they operated in each year. The dataset was created by scraping Google and Google News for articles mentioning each CO and using natural language processing to identify where these articles report each cartel to have operated in a given year.

For H1, we operationalize criminal wars by identifying which municipalities are under monopoly control and those that are under contested control. Monopoly-controlled municipalities are those with only one cartel operating in it in a given year, and contested municipalities are those with two or more cartels operating in them each year. We recognize that this measure is imperfect, as more than one group operating in a territory does not necessarily imply that they are actively contesting it–an issue we address with the more

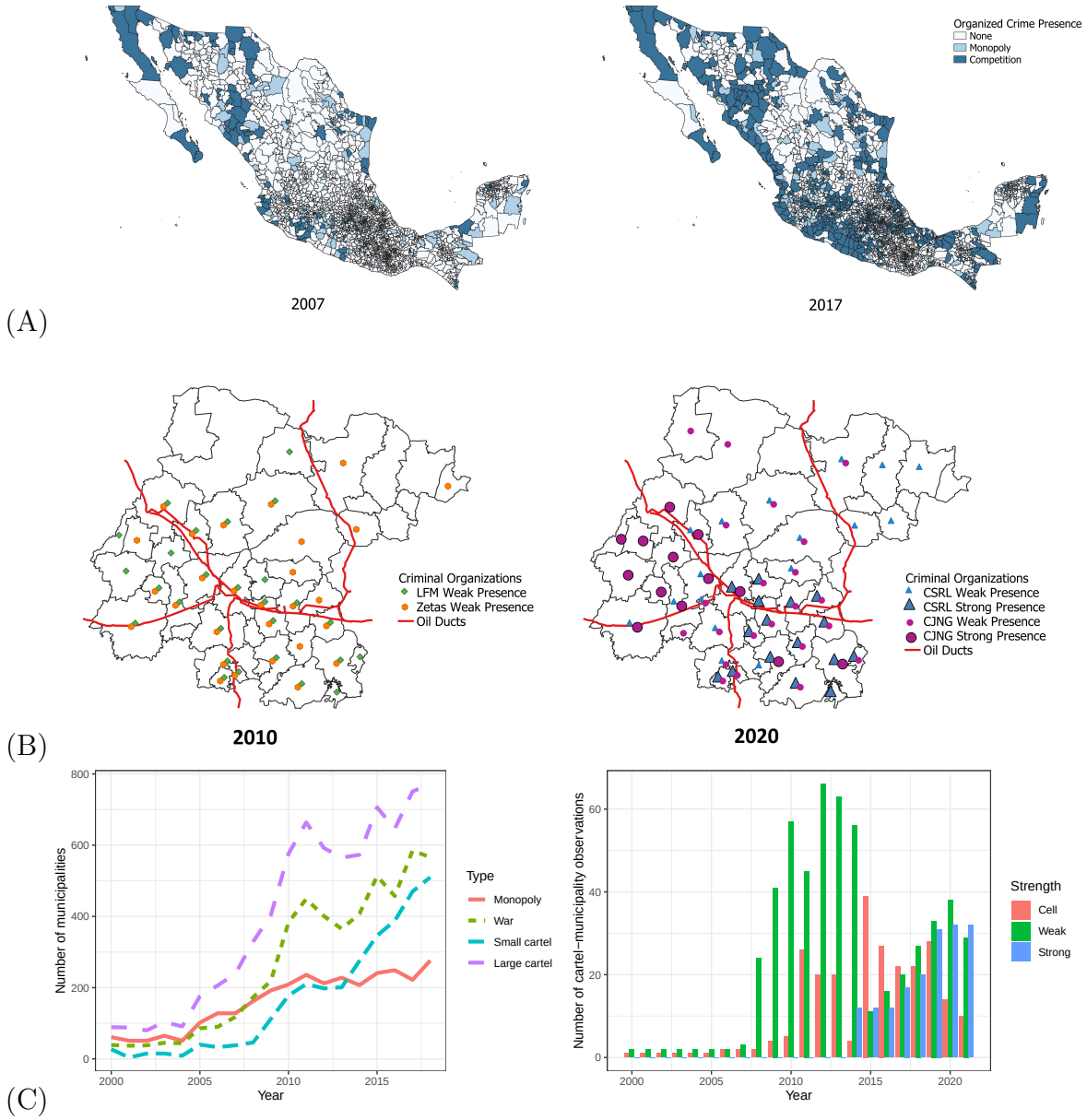

Figure 3: Geographic and temporal distribution of cartel presence. (A) Geographic distribution of cartel monopoly and competition in Mexico in 2007 and 2017. (B) Location of valuable territories and the geographic presence and strength of presence of cartels in Guanajuato in 2000 and 2020. LFM = La Familia Michoacana; CSRL = Cartel Santa Rosa de Lima; CJNG = Cartel Jalisco Nueva Generacion. (C) Number of municipalities with different types of cartel presence across time.

fine-grained Guanajuato dataset.

For H2, we operationalize criminal expansion as a dummy variable that takes a value of 1 for municipalities that experienced new cartel presence in a given year.

For H3, we operationalize cartel types that resulted from criminal fragmentation by classifying each cartel as "large" or "small" and identifying which type each municipality had each year. We broadly define large cartels as those that operated before fragmentation began and their continuations, which typically operate in large sections of the country; we define small cartels as those that fragmented from large cartels, which usually operate in more limited regions.[10]

For H4, we operationalize criminal markets by using data from Mexico's Statistical Agency (*INEGI*) and Army (*SEDENA*) to find municipalities with geographically-fixed lucrative markets. Since drug trafficking is the most lucrative illicit market in Mexico,[11] we consider municipalities that are geographically key to the drug trade as those that may produce strong incentives for COs to use violence to defend. Following existing research, we define these as those municipalities that have a port, are on the U.S.–Mexico border, or are key for poppy cultivation.[12]

The resulting municipality-year national dataset has 46,664 observations. Table 1 presents the descriptive statistics for the national dataset, highlighting the dependent variables and the primary independent variables we examine.

[10]**Large cartels:** Sinaloa Cartel, Beltran Leyva Organization, Gulf Cartel, Zetas Cartel, Northeast Cartel, Michoacana Family Cartel, Knight's Templar Cartel, Tijuana Cartel, Juarez Cartel, Milenio Cartel, and Jalisco New Generation Cartel. **Small cartels:** Aztecas, Barbie, CIDA, CTNG, Cartel Nueva Plaza, Cartel Nuevo Imperio, Cartel de Cancun, Cartel de Colima, Cartel de Ensenada, Cartel de Oaxaca, CSRL, Cartel de Tepalcatepec, Cartel de Tlahuac, Cartel de la Sierra, Cartel del Poniente, Comando Suicida, Cartel del Centro, El Gallito, Fresitas, Fuerza Anti-Union, Grupo Bravo, Grupo Pantera, Grupo Sombra, Guardia Guerrerense, Guerreros Unidos, Jose Pineda, La Barredora, La Manos con Ojos, La Resistencia, La Tercera Hermandad, Union Insurgentes, Union de Leon, Maras, Las Moicas, Los Ardillos, Los Chamorros, Los Damasos, Los Dragones, Los Epotacio, Los Erres, Los Gilos, Los Granados, Los Mazos, Los Metros, Los Pelones, Los Rojos, Los Tena, Los Teos, Los Tequileros, Los Viagras, Los Mazatlecos, Los H2, Los Ciclones, Sangre Nueva Guerrerense, Sangre Nueva Zeta, Los Talibanes, Union Tepito, and Vieja Escuela.

[11]Conservative estimates place the value of the drug trafficking market in Mexico at $10 billion USD per year (Rizzo 2019).

[12]We use data on hectares of poppy eradication between 2000 and 2018 from the Mexican military, and define municipalities as key for poppy cultivation as those with above average poppy eradication. While poppy cultivation is not geographically fixed, it does require certain geographic characteristics that make it very sticky. Moreover, these are municipalities that have historically cultivated poppy and is part of the communities. During this period, 913 municipalities experienced poppy eradication, with the mean being 221.8 hectares, and 79 municipalities having above average poppy eradication. We consider these as those fundamental for poppy cultivation.

Table 1: Descriptive statistics for datasets.

Variable	Min	Max	Mean	SD
TL data, 2007-2011				
High-profile attacks	0	3	0.03	0.19
Cartel monopoly	0	1	0.09	0.29
Cartel war	0	1	0.13	0.33
New cartel presence	0	1	0.20	0.40
Large cartel	0	1	0.21	0.41
Small cartel	0	1	0.06	0.23
Valuable territory	0	1	0.06	0.24
National data, 2000-2018				
Politician assassinations	0	3	0.009	0.099
Cartel monopoly	0	1	0.066	0.248
Cartel war	0	1	0.108	0.310
New cartel presence	0	1	0.160	0.366
Large cartel	0	1	0.164	0.370
Small cartel	0	1	0.066	0.250
Valuable territory	0	1	0.174	0.379
Guanajuato data, 2000-2021				
Government official assassinations	0	4	0.060	0.323
Cartel presence strength	0	3	1.104	1.181
Number of cartel cells	0	4	0.250	0.564
Number of weak cartels	0	4	0.537	0.783
Number of strong cartels	0	2	0.166	0.413
Cartel war	0	1	0.269	0.444
New cartel presence	0	1	0.281	0.450
Oil pipeline	0	1	0.435	0.496

4.2.2 Criminal Dynamics in Guanajuato

In addition to the national dataset based on machine learning, we also use fine-grained hand-coded data on criminal dynamics in the state of Guanajuato, which was collected through extensive qualitative research by Alcocer (2023). The data is composed of three separate datasets that provide information about the population of COs that operated in Guanajuato between January 2000 and December 2021: CO geographic presence and strength of presence, CO histories, and CO relations.

We use these datasets to complement the national dataset because they have at least three clear measurement advantages: (1) much more precise measurement of the geographic presence of cartels; (2) dyadic data measuring the relationships between all cartels (e.g., neutral, allied, rivals) in the state across time; and (3) how well-established each cartel was in each municipality they operated in each year. These advantages allow us to more precisely measure criminal dynamics at the local level when compared to datasets constructed by computers.

First, for H1 examining the effects of criminal wars, the Guanajuato dataset allows us to determine which municipalities have cartels operating in them without active conflict – such as those with only one cartel, with two or more cartels that were neutral, or with two or more cartels in an alliance – and which are actively contested by two or more rival cartels. We operationalize monopoly-controlled municipalities as those where there is either one cartel in operation or more than one cartel though they are not at war with one another. We operationalize contested municipalities as those whether two or more cartels are actively fighting in a municipality. This nuance allows us to overcome measurement challenges from our national dataset for criminal wars.

Second, for H2 examining the effects of cartel expansion, we create an indicator measuring whether a municipality experienced a cartel enter its territory that had not operated there the year prior. Third, for H3 examining how different types of cartels use violence, we use data on how well-established cartels are in a given municipality. Indeed, the size of

cartels is not the only relevant consequence of fragmentation, but the strength of these cartels in municipalities is also a key outcome of fragmentation. In other words, small or large cartels can both be well entrenched or have minimal but still important presence in a territory. At the local level, whether a cartel is well established or not is more important for local dynamics than whether the cartel is "large" or "small" in general. A strength of the hand-coded Guanajuato dataset is that for each municipality, it measures the type of cartel presence: no presence, cell presence, weak presence, and strong presence.[13] This measure is superior at measuring cartel types because it relies on local measures rather than assuming all cartels are of equal strength, as we do with the national data.

Finally, for H4 examining the effects of criminal market structure, we leverage data on the georeferenced location of oil pipelines. As Alcocer (2022) shows, following the government crackdown declared on December 2006, cartels diversified to oil theft, which entails stealing refined oil products such as gasoline and diesel from oil pipelines. While oil theft is not nearly as lucrative as drug trafficking,[14] certain states have become central for oil theft. Guanajuato does not have any territories that are key for drug trafficking, but cartels entering the oil theft market suddenly made the 14 of its 46 municipalities with oil pipelines incredibly valuable for cartels (Alcocer 2022).

The resulting municipality-year dataset for Guanajuato has 1,012 observations. Table 1 presents the descriptive statistics for the Guanajuato dataset, highlighting the dependent variables and the primary independent variables we examine.

[13] Alcocer (2023) defines and measures them as follows. **"Cell presence"**: presence of smaller, more local criminal organizations, not the large cartels. **"Weak presence"**: a CO has continuous operations in a given municipality but it is not strongly established in the municipality. **"Strong presence"**: a CO has established its operations in a given municipality, and the municipality serves as a local stronghold for that CO.

[14] Government estimates places the upper value of the illicit oil theft market at $1.84 billion USD in 2018 (Pérez 2017; Solís 2018).

4.3 Alternative Explanations

To control for existing alternative explanations, we collect data on elections, political vulnerability, and government crackdowns, as well as other important covariates.

4.3.1 Elections

To capture the incentives to use violence created by election cycles, we use election data from Magar (2018) to create a dummy variable that takes a value of 1 for years that a municipality has a local election. Municipalities have elections every three years and are staggered in time across states. TL also use additional election variables as controls in their regression models, including party alternation and electoral competition at the local level. However, we choose to exclude these two control variables because they are likely endogenous to the outcome. That is, if cartels are using violence against government officials, particularly assassinations, to influence electoral outcomes and who is in power, then party alternation and especially electoral results are endogenous to the use of violence against government officials. This endogeneity concern could bias the results, which is why we exclude them.

4.3.2 Political Vulnerability

Trejo and Ley (2020) use a set of nine dummies to consider the political vulnerability hypothesis, with each dummy corresponding to a different federal-state-municipality configuration between the three major parties. However, since 2011, the last year in the sample of Trejo and Ley (2020), the party landscape has become far more complex with the proliferation of four major national parties and dozens of state and local parties. To extend the concept of local political vulnerability, we use election data from Magar (2018) to classify municipalities into four categories: (1) a mayor does not share party affiliation with either the governor or the president; (2) a mayor shares party affiliation with the governor but not the president; (3) a mayor shares party affiliation with the president but not the governor; and (4) a mayor shares party affiliation with both the governor and the president.

However, we note the need to be careful when interpreting the regression coefficients of these variables because the measures may be endogenous. If, as we claim in accordance with Trejo and Ley (2020), cartels can influence electoral outcomes by using violence against specific politicians, then the party in power at the local level could be a result of this violence and a strategic choice of cartels.

4.3.3 Government Crackdown

To measure the federal crackdown that began in December 2006, we would ideally have information on the location of military and federal police deployments. However, given that it was a national crackdown that was implemented across states through federal and state forces, we measure it using a dummy variable that takes a value of 1 starting in 2007 and remains a 1 thereafter. Operations varied in how they were implemented, from being directly led by federal troops to regional commands where federal forces coordinated efforts with state and local level governments. However, in general, these operations were part of a single top-down strategy.

4.3.4 Covariates

Studies on Italy underscore the role that state absence has on the emergence of mafia-style COs (Gambetta 1996; Buonanno et al. 2015; Dimico et al. 2017; Bandiera 2003). In Latin America, state weakness was also traditionally seen as one of the primary reasons behind the proliferation of criminality (O'Donnell 1993). While current scholarship tends to agree that this is a simplified misconception, as COs frequently operate in the same spaces as the state and in regions with strong state capacity (e.g., Arias 2006; Trejo and Ley 2020; Lessing 2021; Durán-Martínez 2017), state capacity is still understood a a factor that shapes how criminal groups and states interact (e.g., Yashar 2018; Durán-Martínez 2017; Moncada 2016, 2022). Thus, while state capacity may not be sufficient to prevent political violence by organized crime, it could still play some role in increasing the costs of such actions.

To operationalize state capacity, we would ideally use a measure like total municipal government expenditure. However, this data is missing for 7.6% of the observations in the national dataset (missing observations = 3,534) each year. As noted by Trejo and Ley (2021), given that a municipality's population has a 0.92 correlation coefficient (standard error = 0.002, adjusted R-squared = 0.8) with its expenditure (see Appendix), we instead use data on municipality population from 2000 as a proxy for state capacity.

5 Empirical Strategy

To assess our hypotheses, we triangulate evidence from three different datasets: national data from TL covering 2007 to 2011, extended national data covering 2000 to 2018, and data on Guanajuato covering 2000 to 2021.

Empirically, Trejo and Ley (2021) rely on a random effects model when analyzing violence against politicians. However, in panel data, random effects assume that unit effects, or unit heterogeneity, are uncorrelated with all independent variables included in the regression model (Wooldridge 2006). In other words, any unit-specific variable omitted from the regression that affects the outcome and is correlated with observed regressors would violate this assumption and create endogeneity issues, resulting in biased coefficients. We have strong substantive reasons to believe this assumption is violated in this case. For example, if local geographic factors matter for where criminal groups operate and why they fight (e.g., poppy-cultivating regions, territories with oil pipelines, cities with U.S.-Mexico border crossings), and these variables are not included in the random effects regression but are correlated with the independent variables in the regression, such as population or fiscal revenue, then the assumption is violated and coefficients will be biased. Empirically, as is now standard practice, the random effects assumption can be tested using a Hausman specification test, which tests whether there is a correlation between the unit-specific errors and the explanatory variables included in the model (Hausman 1978). We perform this test and find that we must reject

the null hypothesis that random effects are appropriate in this case ($p < 0.00$).

For this reason, we instead rely on two-way fixed effects (TWFE) models to estimate our main results. We believe this approach has at least three strengths. First, fixed effects do not assume that unobserved heterogeneity is uncorrelated with the observed explanatory variables, making fixed effects consistent. Second, unlike random effects, fixed effects allow us to exploit within-unit variation. That is, unit fixed effects estimate how criminal and political changes *within* each municipality affect violence against government officials, which we believe is a more appropriate comparison than pooling observations and comparing differences *across* municipalities as the random effects model does. Third, unit fixed effects control for any unit-specific time-invariant omitted variable and the time fixed effects control for any common shocks that affects all municipalities. [15]

Our first regression analysis focuses on criminal wars and follows the form:

$$y_{it} = \delta_1 monopoly_{it} + \delta_2 war_{it} + \beta X_{it} + \tau + \mu + \epsilon_{it} \quad (1)$$

where y_{it} denotes the number of violent attacks against government officials, $monopoly_{it}$ is a dummy variable indicating whether there is only one cartel operating in a municipality (for the Guanajuato sample this indicates whether there is only one cartel or more than one cartel but they not at war), war_{it} is a dummy variable indicating whether there is more than one cartel operating in a municipality (for the Guanajuato sample this indicates whether two or more cartels are actively fighting in a municipality), X_{it} is a matrix of control variables that includes the political factors, and τ and μ are time and unit fixed effects, respectively.

For the analysis of Guanajuato, we not only have data on geographic presence, but also on the strength of that presence at the local level. We can therefore test whether, at the local level, criminal wars between cartels that are not well established and criminal wars between well-established cartels have differential effects. To test this, we estimate:

[15] Appendix Table A2 replicates the TL random effects models adding our independent variables, with the results being consistent with TWFE results.

$$y_{it} = \delta_4(strength_{it} \times war_{it}) + \beta X_{it} + \tau + \mu + \epsilon_{it} \quad (2)$$

where $strength_{it}$ denotes the strongest presence of a cartel (i.e., 0 for no presence, 1 for cell presence, 2 for weak presence, and 3 for strong presence) in municipality i and time t.

To analyze the effect of criminal expansion, we estimate:

$$y_{it} = \delta(\text{cartel number}_{it} \times new\ presence_{it}) + \beta X_{it} + \tau + \mu + \epsilon_{it} \quad (3)$$

where y_{it} denotes the number of violent attacks against government officials, cartel number$_{it}$ denotes the number of cartels operating in a municipality (for the Guanajuato sample this indicates the strongest presence of a cartel), new presence$_{it}$ is a dummy variable measuring whether municipality i experienced a new cartel enter its territory at time t, X_{it} is a matrix of control variables that includes the political factors, and τ and μ are time and unit fixed effects, respectively.

To investigate whether different types of cartels driven by fragmentation use violence against the state deferentially, we estimate the following:

$$y_{it} = \gamma_1 small\ cartel_{it} + \gamma_2 large\ cartel_{it} + \beta X_{it} + \tau + \mu + \epsilon_{it} \quad (4)$$

where small cartel$_{it}$ is a dummy variable indicating whether a small cartel is present in a municipality and large cartel$_{it}$ is a dummy variable indicating whether a large cartel is present in a municipality.

Finally, to test whether violence against politicians is more prevalent in territories central to illicit markets we estimate the following regression:

$$y_{it} = \psi_1(cartel_{it} \times valuable\ territory_i) + \beta X_{it} + \tau + \mu + \epsilon_{it} \quad (5)$$

where large cartel$_{it}$ is a dummy variable measuring whether a municipality has cartel

presence (for the Guanajuato sample this measures the strongest presence of a cartel in a municipality), and valuable territory$_i$ is a dummy variable which takes the value of 1 if the municipality is central for drug trafficking (for the Guanajuato sample it takes the value of 1 if a municipality has oil pipelines) and 0 otherwise.

6 Results

6.1 High-Profile Attacks, 2007-2011

Table 2 shows the results using the outcome data from TL. First, we find that the effects of political vulnerability become statistically insignificant in all models once criminal dynamics are considered.[16] However, as mentioned previously, if cartels are influencing which party wins the mayorship, these measures are endogenous, so it is unclear how to interpret the results. Like existing studies, we also find that years with local elections are associated with more attacks. The effects of the federal crackdown are absorbed by the year fixed effects, so they are not estimated.

[16]Appendix Table A2 replicate these results using the negative binomial random effects models that TL use. Like Trejo and Ley (2021), RE models show that states with leftist PRD governors (not mayors) and to a lesser degree municipalities whose mayors *and* governors are from the PRI experience more high-profile criminal attacks.

Table 2: Criminal dynamics and high-profile attacks, Mexico, 2007-2011. Model (1) shows effects of criminal wars. Model (2) shows effects of criminal expansion. Model (3) shows effects of cartel size. Model (4) shows effects in key territories for drug trafficking.

	Dependent variable:			
	High-Profile Attacks			
	(1)	(2)	(3)	(4)
Cartel monopoly	0.013			
	(0.010)			
Cartel war	0.054***			
	(0.013)			
New cartel presence		0.010		
		(0.010)		
Cartel dummy		0.053**		0.023***
		(0.025)		(0.008)
Cartel dummy X New cartel presence		−0.009		
		(0.028)		
Large cartel			0.031***	
			(0.009)	
Small cartel			0.004	
			(0.016)	
Cartel dummy X Valuable territory				0.089*
				(0.052)
PAN-PAN-PRI	−0.001	−0.001	0.000	0.001
	(0.008)	(0.008)	(0.008)	(0.008)
PAN-PAN-PRD	0.001	0.001	0.002	0.003
	(0.010)	(0.010)	(0.010)	(0.010)
PAN-PRI-PAN	0.005	0.005	0.005	0.006
	(0.008)	(0.008)	(0.008)	(0.008)
PAN-PRI-PRI	0.004	0.004	0.004	0.005
	(0.007)	(0.007)	(0.007)	(0.007)
PAN-PRI-PRD	0.007	0.007	0.007	0.009
	(0.008)	(0.008)	(0.008)	(0.008)
PAN-PRD-PAN	0.007	0.006	0.002	0.001
	(0.024)	(0.024)	(0.024)	(0.024)
PAN-PRD-PRI	0.002	0.002	−0.001	−0.003
	(0.023)	(0.023)	(0.023)	(0.023)
PAN-PRD-PRD	0.012	0.012	0.010	0.008
	(0.023)	(0.023)	(0.024)	(0.023)
Local election	0.026***	0.026***	0.026***	0.026***

Table 2: (continued)

	(0.006)	(0.006)	(0.006)	(0.006)
Federal election	−0.041***	−0.041***	−0.041***	−0.041***
	(0.010)	(0.010)	(0.010)	(0.010)
Attacks in neighbors t-1	−0.001	−0.001	−0.001	−0.002
	(0.009)	(0.009)	(0.009)	(0.009)
Fiscal revenue	−0.001	−0.001	−0.001	−0.001
	(0.002)	(0.002)	(0.002)	(0.002)
Prosecutor offices	−0.007	−0.008	−0.004	−0.006
	(0.066)	(0.066)	(0.066)	(0.066)
Adj. R^2	0.113	0.113	0.111	0.112
Regional Dummies	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Num.Obs.	9854	9854	9854	9854

Standard errors clustered at the municipality level.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Centrally, model (1) finds that cartel wars are associated with a 0.054 increase in the number of attacks, while monopoly control is not associated with more attacks. The effect of cartel wars is substantively large, as it signifies nearly twice the mean of attacks in the sample. Model (2) finds no evidence that new cartel presence is associated with criminal attacks in the short term. This suggests that cartels may need time to establish themselves in a new territory before being able to attack the state. Interestingly, model (3) finds that large cartels are the ones driving this violence between 2007 and 2011, with small cartels having a positive but statistically insignificant effect. This makes substantive sense, as fragmentation took off in 2010 and this sample only covers up to 2011, meaning that violence during this period was primarily driven by large cartels. Finally, model (4) shows that high-profile criminal attacks are far more likely (a 0.48 standard deviation (SD) increase) in territories that are key for drug trafficking with geographically-fixed characteristics.

6.2 Politician Assassinations, 2000-2018

Extending the time period analyzed yields interesting results. Table 3 shows the results using the national data on the assassination of politicians by cartels between 2000 and 2018. In the Appendix we also include the following additional results: using the less conservative measure of whether an assassination was related to cartels, using lagged measures of criminal dynamics, and using data on where the politicians were killed, not where they worked, with the conservative and regular measures of assassinations related to cartels. All results are consistent.

First, like the previous results using the TL data, all models in this extended analysis also find null results for political vulnerability explaining political violence. However, unlike the previous results, this extended analysis does not find that local elections are associated with more attacks, perhaps suggesting that these attacks are occurring more frequently outside of election cycles as they have become more prevalent.

Looking at criminal dynamics, model (1) shows that the assassination of politicians is driven by cartel wars. The effect is also substantively large, as the coefficient suggests that cartel wars are associated with more than three times the number of killings than the average municipality. Unlike the TL sample, the coefficient for monopoly control is positive and statistically significant, perhaps suggesting that cartels began using violence against government officials even in the absence of cartel wars after 2011. Another interesting difference shown by model (2) is that the coefficient for new cartel presence is positive and statistically significant – it is associated with a 0.11 SD increase in assassinations – though only when there is no pre-existing cartel presence in a municipality. One interpretation is that politicians in territories where a cartel already operates have already implemented precautions against cartels or because the incumbent cartel protects the politicians they have already captured. Looking at the types of cartels, model (3) shows that both small and large cartels are associated with killing politicians. And while the coefficient for large cartels is slightly larger than small cartels, we cannot conclude that they are statistically

Table 3: Criminal dynamics and political assassinations of elected officials in Mexico, 2000-2018. Model (1) shows effects of criminal wars. Model (2) shows effects of criminal expansion. Model (3) shows effects of cartel size. Model (4) shows effects in key territories for drug trafficking.

	Dependent variable:			
	Politician Assassinations			
	(1)	(2)	(3)	(4)
Cartel monopoly	0.010***			
	(0.003)			
Cartel war	0.029***			
	(0.004)			
Cartel dummy		0.010*		0.017***
		(0.005)		(0.003)
New cartel presence		0.011***		
		(0.003)		
Cartel dummy X New cartel presence		0.009		
		(0.007)		
Large cartel			0.018***	
			(0.003)	
Small cartel			0.014***	
			(0.005)	
Cartel dummy X Valuable territory				0.029**
				(0.012)
State pol. vulnerability	0.000	0.000	0.000	0.000
	(0.002)	(0.002)	(0.002)	(0.002)
Federal pol. vulnerability	0.000	0.000	0.000	0.001
	(0.002)	(0.002)	(0.002)	(0.002)
State and federal pol. vulnerability	0.000	0.000	0.001	0.000
	(0.003)	(0.003)	(0.003)	(0.003)
Local election	0.002	0.002	0.002	0.002
	(0.001)	(0.001)	(0.001)	(0.001)
Adj. R^2	0.029	0.029	0.029	0.028
Controls	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Num.Obs.	38 678	38 678	38 678	38 678

Standard errors clustered at the municipality level.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

different from each other. These results make sense substantively: cartel fragmentation increases significantly starting 2010, so this extended sample is capturing the effects smaller fragments once they started proliferating. These results suggest that smaller cartels began assassinating state officials, like larger cartels, once they proliferated. Lastly, as in the TL results, we find that cartels are more likely to assassinate politicians in key drug trafficking territories with geographically-fixed characteristics. As with territories with cartel wars, territories with valuable geographically-fixed characteristics and cartel presence are more than three times more likely to see an assassination than the average municipality.

6.3 State Official Assassinations in Guanajuato, 2000-2021

Narrowing in on Guanajuato where criminal dynamics are better measured gives us a more nuanced understanding of their effects on violence against government officials. Table 4 shows the results of this analysis. As with the TL and the extended national sample, all coefficients for political vulnerability are statistically insignificant. This provides additional evidence that political vulnerability is not a central explanation in understanding criminal attacks against the state. Unfortunately, since elections happen at the same time in Guanajuato, the year fixed effects absorb the effect of election cycles.

Perhaps most interesting is that, unlike the other samples, criminal wars (model 1) have a positive but statistically insignificant effect on assassinations of government officials. However, model (2) provides a more nuanced explanation. Criminal wars by cartels that are well-established in a territory does explain these assassinations and each increase in presence strength is associated with more than 2.6 times the killings than the average municipality. The results suggest that criminal wars by themselves are not sufficient to explain this violence, but that they need to be between cartels that are well-established in a territory. This is consistent with the TL and extended national results showing that large cartels are more likely to perpetrate this type of violence. Model (4) further supports this interpretation by showing that it is cartels with a strong presence in territories that are most associated with

Table 4: Criminal dynamics and political assassinations of state officials in Guanajuato, Mexico, 2000-2021. Model (1) shows effects of criminal wars. Model (2) shows effect of criminal wars depending on the strength of cartel presence. Model (3) shows effect of criminal expansion. Model (4) shows effects of the strength of cartel presence in a territory. Model (5) shows effects in key territories.

	Dependent variable:				
	Government Official Assassinations				
	(1)	(2)	(3)	(4)	(5)
Cartel monopoly	0.102				
	(0.109)				
Cartel war	0.015	−0.326**			
	(0.043)	(0.161)			
New cartel presence			−0.103		
			(0.125)		
Cartel presence strength		−0.005	0.004		−0.015
		(0.018)	(0.018)		(0.019)
Cartel presence strength X Cartel war		0.157**			
		(0.077)			
Cartel presence strength X New presence			0.053		
			(0.065)		
Cartel presence strength X Oil pipeline					0.057*
					(0.032)
Cell presence				0.063*	
				(0.032)	
Weak presence				−0.057	
				(0.039)	
Strong presence				0.123*	
				(0.061)	
State pol. vulnerability	0.042	0.041	0.042	0.046	0.029
	(0.104)	(0.104)	(0.093)	(0.099)	(0.099)
Federal pol. vulnerability	0.012	0.016	0.014	0.011	0.003
	(0.081)	(0.078)	(0.075)	(0.079)	(0.082)
State and federal pol. vulnerability	−0.044	−0.057	−0.048	−0.059	−0.032
	(0.171)	(0.169)	(0.158)	(0.166)	(0.168)
Adj. R^2	0.114	0.123	0.113	0.128	0.121
Controls	Yes	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Num.Obs.	1012	1012	1012	1012	1012

Standard errors clustered at the municipality level.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

political assassinations. Like the TL sample and unlike the extended national sample, model (3) finds no evidence that new cartel presence leads to assassinations. Finally, as with the other two samples, we find that political assassinations are most likely in territories with illicit markets that are geographically fixed.

6.4 Triangulating Results

Taken together, the evidence suggests at least four key conclusions. First, criminal wars drive political assassinations, particularly when at least one of the cartels is well-established in the territory where they are fighting. Second, we find mixed evidence that cartels entering new territories is associated with more violence against government officials in the short term. Third, while violence against politicians was primarily a strategy used by larger cartels soon after the 2007 government crackdown, it seems to have then been adopted by cartel fragments that proliferated starting in 2010. It is also a strategy used in territories where cartels are well established, not where they have weak presence. Finally, political violence by cartels is more prevalent in territories with lucrative and geographically-fixed illicit markets.

Other results, while not our main focus, are worth noting. First, once criminal dynamics are accounted for, we find no evidence supporting the hypothesis that political vulnerability, driven by party polarization and party politics, is an important factor for understanding when and where cartels attack politicians. This finding counters prominent arguments about political vulnerability and inter-governmental cooperation explaining CO violence. Second, when using data that extends beyond 2011 and accounting for criminal dynamics, we also find no evidence that local election cycles are associated with more violence against politicians, perhaps suggesting that as this type of violence has become more prevalent it has extended beyond election cycles.

7 Conclusion

Violence against government officials, including assassinations, is one of the most perverse actions that can be taken against the state by any non-state actor, be it rebel groups, terrorist organizations, or COs. Nevertheless, little attention has been given to the phenomenon, and specifically the role that COs play in perpetrating political violence. This article contributes to this literature by exploring how criminal dynamics help explain when and where COs use violence against government officials, an explanation that has been largely overlooked by existing research.

By measuring the extent of violence against state actors by COs, this article also accentuates that COs are very important *political*, and not just economic or criminal, actors. While this article focuses on Mexico, new research within and outside academia is beginning to show that the killing of state actors by non-state actors, not only COs, is far more prevalent across the world than we realize, even those without active civil conflicts. For example, in Central America (Blume 2023), Brazil (Albarracin 2018; Carvalho 2023; Norris and Dalby 2020), Ecuador (ACLED 2023), Colombia (Navarrete 2019), and even in Africa and Asia (Global Initiative Against Transnational Organized Crime 2021). Therefore, if we want to understand the drivers of this violence in order to counteract it, further research on the topic is necessary and crucial.

For example, existing research has argued that one of the main causes for the increase in drug wars, cartel fragmentation, cartel expansion, and cartel diversification in Mexico was the government crackdown against drug trafficking that began in December of 2006 (e.g., Alcocer 2022; Osorio 2015; Calderón et al. 2015; Phillips 2015; Atuesta and Ponce 2017). If these types of government policies exacerbate criminal dynamics, which then lead to COs using violence against the state, it suggests the need to rethink these hard-line policies aimed at combating COs.

Moreover, while this study focuses on the drivers of this violence, future research would benefit from exploring the consequences that this violence has on various outcomes of interest.

This has received even less attention that understanding the drivers of this violence. For example, Trejo and Ley (2021) argue that killing politicians allows COs to establish criminal governance over a territory, exacerbating crime and violence, while Daniele and Dipoppa (2017) argue that it helps mafias in Italy influence policy. Dal Bó et al. (2006) theorize that the use of violence leads to more corruption and worse politicians. Alesina et al. (2018) find evidence that violence against politicians in Italy decreases the attention given to anti-Mafia efforts in parliament. Finally, Ley (2018) finds that violence against state actors reduces turnout in elections. These studies highlight why understanding the use violence against government officials by COs is imperative, as it has fundamental and widespread implications for democracy, governance, the rule of law, state capacity, and citizen trust in government institutions.

References

ACLED (2023). The killing of villavicencio: A symptom of rising political violence ahead of ecuador's snap elections. https://acleddata.com/2023/08/14/the-killing-of-villavicencio-a-symptom-of-rising-political-violence-ahead-of-ecuadors-snap-elections/.

Albarracin, Juan (2018). Criminalized electoral politics in brazilian urban peripheries. *Crime, Law, and Social Change 69*(4), 553–575.

Alcocer, Marco (2022). From drug cartels to criminal enterprises: Government crackdowns and organized crime diversification strategies. Unpublished manuscript.

Alcocer, Marco (2023). Mapping Criminal Organizations in Guanajuato. https://doi.org/10.7910/DVN/WJSGWW.

Alesina, Alberto, Salvatore Piccolo, and Paolo Pinotti (2018). Organized crime, violence, and politics. *Review of Economic Studies 86*(2), 457–499.

Arias, Enrique Desmond (2006). *Drugs and Democracy in Rio de Janeiro: Trafficking, Social Networks, and Public Security*. University of North Carolina Press.

Arias, Enrique Desmond (2017). *Criminal Enterprises and Governance in Latin America and the Caribbean*. New York: Cambridge University Press.

Atuesta, Laura H and Aldo F Ponce (2017). Meet the narco: increased competition among criminal organisations and the explosion of violence in mexico. *Global Crime 18*(4), 375–402.

Bailey, John and Matthew M. Taylor (2009). Evade, confront or corrupt? organised crime and the state in brazil and mexico. *Journal of Politics in Latin America 1*(2).

Bandiera, O. (2003). Land reform, the market for protection, and the origins of the sicilian mafia: Theory and evidence. *Journal of Law, Economics, & Organization 19*(1), 218–244.

Barnes, Nicholas (2017). Criminal politics: An integrated approach to the study of organized crime, politics, and violence. *Perspectives on Politics 15*(4), 967–987.

Bartman, Jos Midas (2018). Murder in mexico: are journalists victims of general violence or targeted political violence? *Democratization 25*(7), 1093–1113.

Blume, Laura (2023). Violence against public figures (vapf). https://www.vapfproject.com/.

Blume, Laura Ross (2017). The old rules no longer apply: Explaining narco-assassinations of mexican politicians. *Journal of Politics in Latin America 9*(1), 59–90.

Blume, Laura R (2022). Collusion, co-optation, or evasion: The politics of drug trafficking violence in central america. *Comparative political studies 55*(8), 1366–1402.

Blust, Kendal (2021). Mayoral candidate gunned down in southern sonora. https://fronterasdesk.org/content/1683412/mayoral-candidate-gunned-down-southern-sonora.

Buonanno, Paolo, Ruben Durante, Giovanni Prarolo, and Paolo Vanin (2015). Poor Institutions, Rich Mines: Resource Curse in the Origins of the Sicilian Mafia. *The Economic Journal 125*(586), 175–202.

Calderón, Gabriela, Gustavo Robles, Alberto Díaz-Cayeros, and Beatriz Magaloni (2015). The beheading of criminal organizations and the dynamics of violence in mexico. *Journal of Conflict Resolution 59*(8), 1455–1485.

Calderón, Laura (2018, January). An analysis of mayoral assassinations in mexico, 2000-17. Working Paper 1, Justice in Mexico.

Carey, Sabine C. and Anita R. Gohdes (2021). Understanding journalist killings. *The Journal of Politics 83*(4), 1216–1228.

Carvalho, Marianna (2023). The political economy of assassinations. *Working paper*.

Collier, Paul and Anke Hoeffler (1998). On economic causes of civil war. *Oxford economic papers 50*(4), 563–573.

Cruz, José Miguel (2016). State and criminal violence in latin america. *Crime, law and social change 66*, 375–396.

Dal Bó, Ernesto, Pedro Dal Bó, and Rafael Di Tella (2006). "plata o plomo?": bribe and punishment in a theory of political influence. *American Political science review 100*(1), 41–53.

Dal Bó, Ernesto and Rafael Di Tella (2003). Capture by threat. *Journal of Political Economy 111*(5), 1123–1154.

Daniele, Gianmarco and Gemma Dipoppa (2017). Mafia, elections and violence against politicians. *Journal of Public Economics 154*, 10–33.

De León Vázquez, Salvador and Rubén Arnoldo González Macías (2020). Reportear en el desamparo: Análisis de las medidas de protección a periodistas en méxico desde el contexto local [reporting in distress: Analysis of protection measures for journalists in mexico from the local context]. *Revista de Comunicación 19*(2), 87–109.

Dimico, Arcangelo, Alessia Isopi, and Ola Olsson (2017). Origins of the Sicilian Mafia: The Market for Lemons. *The Journal of Economic History 77*(4), 1083–1115.

Dorff, Cassy, Colin Henry, and Sandra Ley (2023). Does violence against journalists deter detailed reporting? evidence from mexico. *Journal of Conflict Resolution 67*(6), 1218–1247.

Durán-Martínez, Angélica (2017). *The politics of drug violence : criminals, cops and politicians in Colombia and Mexico*. New York, NY, United States of America: Oxford University Press.

Díaz-Cerveró, Elba, Daniel Barredo-Ibáñez, and Rubén Arnoldo González Macías (2022). Caught in the middle: Internal and external pressures on the coverage of organized crime in mexico. *SAGE open 12*(2), 215824402210946–.

Fearon, James D. (2004). Why do some civil wars last so much longer than others? *Journal of peace research 41*(3), 275–301.

Findley, Michael G. and Josiah F. Marineau (2015). Lootable resources and third-party intervention into civil wars. *Conflict management and peace science 32*(5), 465–486.

Frausto, Salvador (2016). Alcaldes bajo ráfagas. https://interactivo.eluniversal.com.mx/2016/alcaldes-asesinados/.

Gambetta, Diego (1996). *The Sicilian Mafia: The Business of Private Protection*. Cambridge, Massachusetts: Harvard University Press.

Global Initiative Against Transnational Organized Crime (2021). Global assassination monitor. https://assassination.globalinitiative.net/monitor/.

Hausman, Jerry A (1978). Specification tests in econometrics. *Econometrica: Journal of the econometric society*, 1251–1271.

Holland, Bradley E and Viridiana Rios (2017). Informally governing information: How criminal rivalry leads to violence against the press in mexico. *Journal of Conflict Resolution 61*(5), 1095–1119.

Huerta, Vìctor Antonio Hernàndez (2020). Candidates murdered in mexico: Criminal or electoral violence? *Política y gobierno 27*(2), 1–28.

Humphreys, Macartan (2005). Natural resources, conflict, and conflict resolution: Uncovering the mechanisms. *The Journal of conflict resolution 49*(4), 508–537.

Lakhani, Nina (2016). Young, idealistic – and dead: the mexican mayor gunned down on her second day. https://www.theguardian.com/world/2016/jan/13/mexico-mayor-gisela-mota-murdered-mafia.

Lessing, Benjamin (2017). *Making peace in drug wars : crackdowns and cartels in Latin America*. Cambridge studies in comparative politics. Cambridge, United Kingdom ;: Cambridge University Press.

Lessing, Benjamin (2021). Conceptualizing criminal governance. *Perspectives on politics 19*(3), 854–873.

Ley, Sandra (2018). To vote or not to vote: how criminal violence shapes electoral participation. *Journal of Conflict Resolution 62*(9), 1963–1990.

Magar, Eric (2018). Recent mexican election vote returns repository. https://github.com/emagar/elecReturns.

Moncada, Eduardo (2016). Cities, business, and the politics of urban violence in latin america. In *Cities, Business, and the Politics of Urban Violence in Latin America*. Stanford University Press.

Moncada, Eduardo (2022). *Resisting extortion: Victims, criminals, and states in Latin America*. Cambridge University Press.

Navarrete, Maria Alejandra (2019). Why are political candidates being assassinated in colombia? https://insightcrime.org/news/analysis/why-political-candidates-assassinated-colombia/.

Norris, Isaac and Chris Dalby (2020). Why have political assassinations more than doubled in brazil? https://insightcrime.org/news/analysis/political-assassinations-doubled-in-brazil/.

O'Donnell, Guillermo (1993). On the state, democratization and some conceptual problems: A latin american view with glances at some postcommunist countries. *World Development 21*(8), 1355–1369.

Osorio, Javier (2015). The contagion of drug violence: spatiotemporal dynamics of the mexican war on drugs. *Journal of Conflict Resolution 59*(8), 1403–1432.

Pérez, Ana Lilia (2017). *PEMEX RIP: Vida y asesinato de la principal empresa mexicana*. Grijalbo.

Phillips, Brian J (2015). How does leadership decapitation affect violence? the case of drug trafficking organizations in mexico. *The Journal of Politics 77*(2), 324–336.

Pérez Esparza, David and Helden De Paz Mancera (2018). *Mayoral Homicide in Mexico: A Situational Analysis on the Victims, Perpetrators, and Locations of Attacks*. Rice University: James A. Baker III Institute for Public Policy.

Rios, Viridiana (2012). Tendencias y explicaciones al asesinato de periodistas y alcaldes en méxico: El crimen organizado y la violencia de alto perfil. Unpublished manuscript.

Rios, Viridiana (2015). How government coordination controlled organized crime: The case of mexico's cocaine markets. *Journal of Conflict Resolution 59*(8), 1433–1454.

Rizzo, Salvador (2019, Jun). Do mexican drug cartels make $500 billion a year? https://www.washingtonpost.com/politics/2019/06/24/do-mexican-drug-cartels-make-billion-year/.

Ross, Michael L (2004a). How do natural resources influence civil war? evidence from thirteen cases. *International Organization 58*(1), 35–67.

Ross, Michael L. (2004b). What do we know about natural resources and civil war? *Journal of peace research 41*(3), 337–356.

Shirk, David and Joel Wallman (2015). Understanding mexico's drug violence. *The Journal of Conflict Resolution 59*(8), 1348–1376.

Signoret, Patrick, Marco Alcocer, Cecilia Farfan Mendez, and Fernanda Sobrino (2021). Mapping criminal organizations in mexico: State panel 2007-2015. https://doi.org/10.7910/DVN/N0KGCZ. Harvard Dataverse, V1.

Sobrino, Fernanda (2023). Mexican cartel wars: Fighting for the u.s opioid market. *Working paper*.

Solís, Arturo (2018, Dec). Pemex reconoce más pérdidas por robo de combustible durante 2018. https://www.forbes.com.mx/pemex-reconoce-mas-perdidas-por-huachicoleo-durante-2018/.

Redacción (2002). La regidora sabía demasiado. https://www.proceso.com.mx/nacional/2002/3/3/la-regidora-sabia-demasiado-64841.html.

Trejo, Guillermo and Sandra Ley (2016). Federalism, drugs and violence why intergovernmental partisan conflict stimulated the violence of the drug trafficking in mexico. *Política y Gobierno 23*(1), 11–56.

Trejo, Guillermo and Sandra Ley (2020). *Votes, drugs, and violence : the political logic of criminal wars in Mexico*. Cambridge University Press.

Trejo, Guillermo and Sandra Ley (2021). High-profile criminal violence: Why drug cartels murder government officials and party candidates in mexico. *British Journal of Political Science 51*(1), 203–229.

Wooldridge, Jeffrey M. (2006). *Introductory econometrics: a modern approach*. Australia: South-Western College Pub.

Yashar, Deborah J. (2018). *Homicidal ecologies: illicit economies and complicit states in Latin America*. Cambridge studies in comparative politics. Cambridge: Cambridge University Press.

Appendix

A Measuring Political Violence

A.1 Political Assassinations, 2000-2018

To create this dataset, we first rely on three existing datasets on assassinated mayors: Pérez Esparza and De Paz Mancera (2018) collect data on assassinated mayors between July 8, 2004 and March 1, 2018, Frausto (2016) collects data on mayoral assassinations from 2005 to 2016, and the Association of Local Authorities of Mexico collects data on assassinated mayors from November 16, 2006 to April 15, 2018. We first merge these datasets and validate each observation by searching for information on each event, and in the process we collect additional information on each event. The raw datasets from TL and Calderón (2018) are not publicly available so could not be used, and the dataset from Blume (2017) is provides counts but is aggregated to the state-year. We use the latter for validating total numbers but could not be used at the data collection stage.

We then extend this compiled dataset to include elected positions beyond mayors and expand the time frame to include January 1, 2000 - December 31, 2018. To do this we first carried out qualitative research to identify the total number of assassinated politicians per state each year. For most states we found articles containing lists of the politicians killed within the state during some time period. We then independently investigated each mention. To complement these lists, we then conducted systematic online searches using key Spanish phrases[17] per state per year per elected position (*Municipal*: alcalde, regidor, sindico. *State*: diputado local, diputado estatal, gobernador. *Federal*: diputado federal, senador). Importantly, our scope covers 2000 to 2018 and we include all elected positions, thereby expanding the time period and types of politicians that existing datasets include.

[17]Such as "matan alcalde", "asesinan alcalde", "muere alcalde" for each elected position: regidor, sindico, alcalde/presidente municipal, senador, diputado, and gobernador. For each search we restricted Google and Bing results to four month time intervals.

Finally, we validate a subset of the dataset using data provided by Blume (2017), which does not include individual assassinations but does identify the number of politicians assassinated per state per year between 2005 and 2015.

For each observation, we then code whether the assassination was related to cartels or not based on the information available about the assassination. We created two different measurements from this variable, a regular measure and a more conservative measure, the latter which we use in the main paper and the former in the appendix. In short, the regular measure asked: Is there evidence that finds that an assassination is clearly not related to organized crime? This measure attempts to filter out any assassinations that were clearly not perpetrated by cartels and includes assassinations that cannot be clearly attributed to a perpetrator. The conservative measure asked: Is there information that indicates that the assassination was linked to cartels? This measure attempts to only include assassinations that we can clearly attribute to cartels. This includes evidence such as links between the politician and cartels, a narco-message being left by the body, the attack being carried out by a group of armed men, high-caliber guns being used (e.g., machine guns), was the politician ambushed, were dozens of bullets used, or something similar.

This procedure gives us a municipality-year dataset for all of Mexico, identifying 466 assassinated politicians with detailed information for each observation, including: victim name, date of killing, political party, position (e.g., mayor, councilmember, state legislator, governor, or federal legislator), whether they were candidates or in office, past political positions, the municipality in which they were killed, the municipality in which they worked, the two measures of whether it was perpetrated by cartels, and at least two links to the sources of the information.

A.2 High-Profile Assassinations in Guanajuato, 2000-2021

We create this dataset through systematic online searches. First, we searched for all reports mentioning the total number of assassinations of government officials either per year or per

municipality in the state. This process gave us an approximation of the total number of assassinations per year in the state. We then had research assistants (RAs) systematically search for assassinations per position per municipality in four month intervals (e.g., searching for "assassinated councilmember in Leon" and having results shown for January 1, 2015 to April 31, 2015.). The RAs conducted systematic online searches using key Spanish phrases, for example, "Guanajuato matan alcalde", "Guanajuato asesinan alcalde", and "Guanajuato muere alcalde" for the following government positions: regidor, sindico, alcalde/presidente municipal, senador, diputado, gobernador, partidista, funcionario/servidor publico. For each search we restricted Google results to four month time intervals. The RAs then searched for assassinations per position in each of the 46 municipalities.

For each event, the RAs recorded the following information: victim name, date of killing, political party, position (e.g., mayor, councilmember, state legislator, governor, or federal legislator), whether they were candidates or in office, past political positions, the municipality in which they were killed, whether evidence suggests a CO clearly did not commit the murder, and at least two links to the sources of the information.

B Additional Results

B.1 Municipal Finances and Population

Table A1: Correlation between log of municipal expenditure and log population.

	(1)
(Intercept)	7.532***
	(0.021)
log population	0.917***
	(0.002)
Num.Obs.	43 130
R2	0.798
R2 Adj.	0.798

* p < 0.1, ** p < 0.05, *** p < 0.01

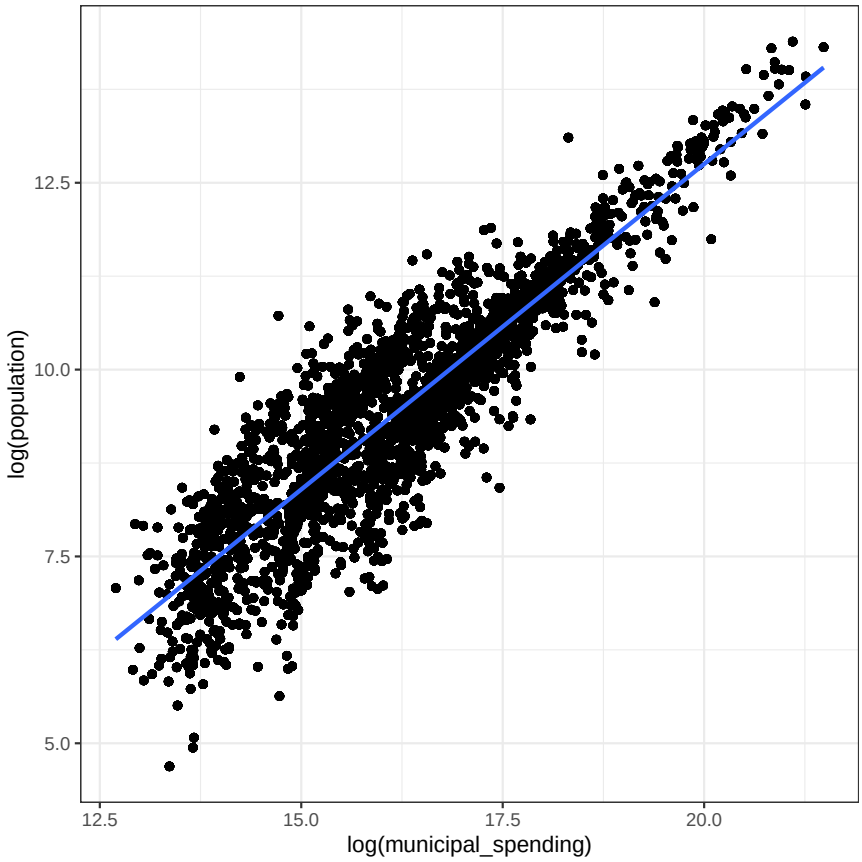

Figure A1: Correlation between log of municipal expenditure and log population.

B.2 High-Profile Attacks: 2007-2011

Here we replicate the results from Trejo and Ley (2021) using the method they use, random effects, but we add data on criminal dynamics.

Table A2: Cartel Dynamics and Political Violence, 2007-2011. Random effects replication of Trejo and Ley (2021) with data on cartel dynamics.

	Random Effects			
	High-Profile Attacks			
	(1)	(2)	(3)	(4)
Cartel monopoly	1.153***			
	(0.222)			
Cartel competition	2.031***			
	(0.171)			
Cartel Dummy		1.833***		1.671***
		(0.319)		(0.182)
New cartel presence		1.094***		
		(0.235)		
Cartel Dummy X New cartel presence		-0.907**		
		(0.384)		
Large cartel			1.655***	
			(0.168)	
Small cartel			0.362**	
			(0.183)	
Valuable territory				1.359***
				(0.349)
Cartel Dummy X Valuable territory				-0.539
				(0.383)
PAN-PAN-PRI	0.253	0.261	0.290	0.318
	(0.456)	(0.456)	(0.457)	(0.457)
PAN-PAN-PRD	-0.127	-0.126	-0.116	-0.050
	(1.066)	(1.067)	(1.067)	(1.065)
PAN-PRI-PAN	0.550	0.553	0.548	0.606
	(0.402)	(0.403)	(0.406)	(0.403)
PAN-PRI-PRI	0.805**	0.797**	0.817**	0.830**
	(0.368)	(0.369)	(0.372)	(0.371)
PAN-PRI-PRD	0.535	0.520	0.541	0.595
	(0.506)	(0.507)	(0.510)	(0.509)
PAN-PRD-PAN	1.300***	1.268**	1.265**	1.379***
	(0.505)	(0.506)	(0.508)	(0.510)
PAN-PRD-PRI	1.476***	1.478***	1.486***	1.543***

Table A3: (continued)

	(0.417)	(0.417)	(0.417)	(0.420)
PAN-PRD-PRD	1.571***	1.571***	1.611***	1.646***
	(0.415)	(0.415)	(0.414)	(0.416)
Local election	0.444***	0.459***	0.476***	0.455***
	(0.138)	(0.138)	(0.138)	(0.138)
Federal election	-0.488**	-0.482**	-0.494**	-0.408*
	(0.231)	(0.231)	(0.232)	(0.231)
Attacks in neighbors t-1	0.220***	0.219***	0.235***	0.211***
	(0.068)	(0.069)	(0.068)	(0.069)
Fiscal revenue	0.008	0.009	0.013	0.012
	(0.012)	(0.012)	(0.012)	(0.012)
Prosecutor offices	-0.230	-0.230	0.140	-0.217
	(1.423)	(1.425)	(1.391)	(1.442)
Constant	-3.451***	-3.383***	-3.505***	-3.988***
	(0.588)	(0.604)	(0.591)	(0.597)
Regional Dummies	Yes	Yes	Yes	Yes
Observations	9854	9854	9854	9854
Log-likelihood	-993.788	-993.913	-1001.146	-992.211
BIC	2208.272	2217.717	2222.986	2214.314

Prosecutor offices per 1,000 inhabitants.

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

B.3 Assassinations in Mexico: 2000-2018

This section provides results with alternative measures of political assassinations, including using the less conservative measure of whether an assassination was related to cartels, using lagged measures of criminal dynamics, and using data on where the politicians were killed, not where they worked, with conservative and regular measures of assassinations.

Table A3: Criminal dynamics and political assassinations of elected officials in Mexico, 2000-2018. Less conservative outcome measure. Model (1) shows effects of criminal wars. Model (2) shows effects of criminal expansion. Model (3) shows effects of cartel size. Model (4) shows effects in key territories for drug trafficking.

	Dependent variable:			
	Politician Assassinations			
	(1)	(2)	(3)	(4)
Cartel monopoly	0.010***			
	(0.003)			
Cartel war	0.030***			
	(0.004)			
Cartel dummy		0.009*		0.017***
		(0.005)		(0.003)
New cartel presence		0.011***		
		(0.003)		
Cartel dummy X New cartel presence		0.010		
		(0.007)		
Large cartel			0.019***	
			(0.003)	
Small cartel			0.013***	
			(0.005)	
Cartel dummy X Valuable territory				0.031**
				(0.012)
State pol. vulnerability	−0.001	−0.001	−0.001	−0.001
	(0.002)	(0.002)	(0.002)	(0.002)
Federal pol. vulnerability	0.000	0.000	0.000	0.001
	(0.002)	(0.002)	(0.002)	(0.002)
State and federal pol. vulnerability	0.001	0.001	0.001	0.000
	(0.003)	(0.003)	(0.003)	(0.003)
Local election	0.002	0.002	0.002	0.002
	(0.001)	(0.001)	(0.001)	(0.001)
Num.Obs.	38 678	38 678	38 678	38 678
R2 Adj.	0.029	0.029	0.029	0.028
Controls	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Standard errors clustered at the municipality level.

Table A4: Criminal dynamics and political assassinations of elected officials in Mexico, 2000-2018. Lagged criminal dynamics. Model (1) shows effects of criminal wars. Model (2) shows effects of criminal expansion. Model (3) shows effects of cartel size. Model (4) shows effects in key territories for drug trafficking.

	Dependent variable:			
	Politician Assassinations			
	(1)	(2)	(3)	(4)
Cartel monopoly	0.006*			
	(0.003)			
Cartel war	0.008**			
	(0.003)			
Cartel dummy		0.012		0.004*
		(0.007)		(0.002)
New cartel presence		0.004		
		(0.003)		
Cartel dummy X New cartel presence		−0.007		
		(0.009)		
Large cartel			0.005**	
			(0.002)	
Small cartel			0.016***	
			(0.005)	
Cartel dummy X Valuable territory				0.034**
				(0.014)
State pol. vulnerability	0.000	0.000	−0.001	0.000
	(0.002)	(0.002)	(0.002)	(0.002)
Federal pol. vulnerability	0.001	0.001	0.000	0.001
	(0.002)	(0.002)	(0.002)	(0.002)
State and federal pol. vulnerability	0.000	0.000	0.001	0.000
	(0.003)	(0.003)	(0.003)	(0.003)
Local election	0.002	0.002	0.002	0.002
	(0.001)	(0.001)	(0.001)	(0.001)
Num.Obs.	36 674	36 674	36 674	36 674
R2 Adj.	0.025	0.025	0.026	0.026
Controls	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Standard errors clustered at the municipality level.

Table A5: Criminal dynamics and political assassinations of elected officials in Mexico, 2000-2018. Outcome data on where officials were killed. Model (1) shows effects of criminal wars. Model (2) shows effects of criminal expansion. Model (3) shows effects of cartel size. Model (4) shows effects in key territories for drug trafficking.

	Dependent variable:			
	Politician Assassinations			
	(1)	(2)	(3)	(4)
Cartel monopoly	0.009***			
	(0.003)			
Cartel war	0.029***			
	(0.004)			
Cartel dummy		0.012**		0.016***
		(0.006)		(0.002)
New cartel presence		0.010***		
		(0.003)		
Cartel dummy X New cartel presence		0.008		
		(0.007)		
Large cartel			0.017***	
			(0.003)	
Small cartel			0.017***	
			(0.005)	
Cartel dummy X Valuable territory				0.032**
				(0.016)
State pol. vulnerability	−0.002	−0.002	−0.002	−0.002
	(0.002)	(0.002)	(0.002)	(0.002)
Federal pol. vulnerability	0.001	0.001	0.001	0.001
	(0.002)	(0.002)	(0.002)	(0.002)
State and federal pol. vulnerability	0.001	0.001	0.001	0.000
	(0.003)	(0.003)	(0.003)	(0.003)
Local election	0.001	0.001	0.001	0.001
	(0.001)	(0.001)	(0.001)	(0.001)
Num.Obs.	38 678	38 678	38 678	38 678
R2 Adj.	0.036	0.036	0.036	0.035
Controls	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Standard errors clustered at the municipality level.

Table A6: Criminal dynamics and political assassinations of elected officials in Mexico, 2000-2018. Less conservative outcome data on where officials were killed. Model (1) shows effects of criminal wars. Model (2) shows effects of criminal expansion. Model (3) shows effects of cartel size. Model (4) shows effects in key territories for drug trafficking.

	Dependent variable:			
	Politician Assassinations			
	(1)	(2)	(3)	(4)
Cartel monopoly	0.009***			
	(0.003)			
Cartel war	0.030***			
	(0.004)			
Cartel dummy		0.013**		0.017***
		(0.006)		(0.003)
New cartel presence		0.010***		
		(0.003)		
Cartel dummy X New cartel presence		0.007		
		(0.007)		
Large cartel			0.018***	
			(0.003)	
Small cartel			0.018***	
			(0.005)	
Cartel dummy X Valuable territory				0.033**
				(0.016)
State pol. vulnerability	−0.002	−0.002	−0.003	−0.002
	(0.002)	(0.002)	(0.002)	(0.002)
Federal pol. vulnerability	0.000	0.000	0.000	0.001
	(0.002)	(0.002)	(0.002)	(0.002)
State and federal pol. vulnerability	0.001	0.001	0.001	0.000
	(0.003)	(0.003)	(0.003)	(0.003)
Local election	0.001	0.001	0.001	0.001
	(0.001)	(0.001)	(0.001)	(0.001)
Num.Obs.	38 678	38 678	38 678	38 678
R2 Adj.	0.035	0.034	0.034	0.034
Controls	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Standard errors clustered at the municipality level.

B.4 High-Profile Assassinations in Guanajuato: 2000-2021

This section provides results with the alternative measure of where political assassinations occurred, that is, where the politicians were killed, not where they worked.

Table A7: Criminal dynamics and political assassinations of state officials in Guanajuato, Mexico, 2000-2021. Outcome data on where officials were killed. Model (1) shows effects of criminal wars. Model (2) shows effect of criminal wars depending on the strength of cartel presence. Model (3) shows effect of criminal expansion. Model (4) shows effects of the strength of cartel presence in a territory. Model (5) shows effects in key territories.

	Dependent variable:				
	Government Official Assassinations				
	(1)	(2)	(3)	(4)	(5)
Cartel monopoly	0.131				
	(0.109)				
Cartel war	0.043		−0.412**		
	(0.039)		(0.155)		
New cartel presence		−0.123			
		(0.125)			
Cartel presence strength		0.012	−0.008		−0.012
		(0.017)	(0.016)		(0.018)
Cartel presence strength X Cartel war			0.210***		
			(0.072)		
Cartel presence strength X New presence		0.056			
		(0.065)			
Cartel presence strength X Oil pipeline					0.065**
					(0.029)
Cell presence				0.103***	
				(0.034)	
Weak presence				−0.051	
				(0.041)	
Strong presence				0.146**	
				(0.060)	
State pol. vulnerability	0.065	0.076	0.064	0.073	0.058
	(0.103)	(0.093)	(0.103)	(0.095)	(0.093)
Federal pol. vulnerability	0.047	0.057	0.053	0.047	0.042
	(0.075)	(0.068)	(0.071)	(0.070)	(0.072)
State and federal pol. vulnerability	−0.096	−0.114	−0.112	−0.117	−0.091
	(0.161)	(0.148)	(0.158)	(0.152)	(0.152)
Num.Obs.	1012	1012	1012	1012	1012
R2 Adj.	0.118	0.114	0.137	0.138	0.125
Controls	Yes	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes

* p < 0.1, ** p < 0.05, *** p < 0.01

Standard errors clustered at the municipality level.