

Perversions of Accountability?

Mayors, Reelection, and Criminal Groups

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Abstract

What is the effect of introducing mayoral reelection on the relationship between criminal groups and state actors? Reelection can provide an opportunity for voters to hold officials accountable, but it can also incentivize politicians to collude with illicit actors to win another term. Armed with longer political horizons, incumbents can make credible future deals with criminal organizations and each can consolidate their power over challengers. To test this, I first explore the impact of mayoral reelection on violence against politicians. Leveraging a multi-period difference-in-differences design across Mexico, I find that mayoral reelection reduces violence targeting politicians, driven by diminished incentives for criminal groups to incite leadership changes. However, when both criminal groups and political parties vie for control, violence against politicians escalates temporarily after reelection, highlighting the complex interplay between political power dynamics and criminal violence. To decipher the underlying mechanisms of these findings, I investigate reported post-reelection criminal activity using a regression discontinuity design, contrasting narrowly winning and narrowly losing incumbents. I find that winning reelection in areas with criminal group presence corresponds to decreased homicides, possibly due to reduced inter-criminal competition. This research enhances our understanding of how institutional changes impact criminal-political interactions and the phenomenon of state capture. By spotlighting the unintended consequences of political reforms on criminal violence, this project highlights the need for tailored security measures to consider existing political environments.

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1 Introduction

In 2018, mayors across Mexico became eligible for reelection for the first time in nearly a century.¹ At the same time, the country experienced record levels of violence against politicians, much of it committed by criminal groups seeking to directly and indirectly control local political offices (Grillo 2016). Previous studies have explored the engagement of criminal groups in elections, both in Mexico and beyond it (e.g., Trejo and Ley 2019; Blume 2017; Trudeau n.d.). But few studies have examined the impact of institutional changes on criminal engagement and the strategies used by such groups to capture local offices. What was the effect of the introduction of reelection on the behavior of criminal groups seeking to capture local offices? How did the reform impact the relationship between criminal groups and state actors?

Despite their lack of overt political aims, criminal groups regularly engage in elections across the globe, using a wide variety of tactics (Olivieri and Sberna 2014; Trejo and Ley 2019; Daly 2021). By working with or buying off political officials, groups can control and set policies and budgets, and reap the rents of office (Barnes 2017; Di Cataldo and Mastrorocco 2022; Pulejo and Querubín n.d.). This may be through illicit campaign financing, coercion of voters or violence against candidates themselves (Blume 2017; Schedler 2014). Competition, both between criminal groups and between political actors, may be a key factor in influencing the strategies used by these groups (Dell 2015; Rios 2013). Further, reelection both increases the value of capturing office, and longer political horizons increase rates of collusion between organized crime and local politicians (Angrist and Kugler 2008; Chacón 2017; Di Cataldo and Mastrorocco 2022).

I argue that the introduction of reelection can stabilize the relationship between local politicians and criminal organizations. Where partisan alternation once created instability (Snyder and Durán-Martínez 2009; Trejo and Ley 2018; Magaloni et al. 2020), longer political horizons can make commitments between the two actors more credible and enduring. To achieve this stability, however, criminal groups may use violence to capture or select the incumbent, guaranteeing future collusion. This issue may be compounded when party competition is increased, and there is more variability in who can hold power. Thus, reelection may temporarily increase electoral violence as relationships adjust to the new, longer horizons. Once securely aligned with an official, groups and the state can strike better bargains with each other and both can more effectively monopolize control over their markets.

To evaluate my theory empirically, I use two techniques. First, I examine how the in-

¹This was part of a larger reform that included the reelection of state and federal legislators. The reform was first announced in 2014.

troductioin of reelection impacted criminal groups' efforts to shape political office. I exploit variation in the staggered implementation of the 2014 Constitutional reform in Mexico, which permitted mayors to run for reelection in some states, starting in the 2018 election. I collect an original data set of newspaper reports of violence against municipal politicians from local, state-level, and national papers across Mexico. Implementing a staggered difference-in-differences (DiD) strategy, I find evidence that reelection decreased violence against politicians, consistent with the theory – but this finding does not hold where criminal groups are present and parties do not have monopolistic control. Where power is unstable, there is a significant increase in attacks, supporting the theory. This empirical strategy provides a macro-level perspective on the effects of the reform. These findings are robust when addressing concerns of spillovers and through alternative estimators.

Then, I explore the mechanisms of this theory, that stabilization in mayoral power can also stabilize the relationship between state actors and criminal organizations. By using a regression discontinuity design (RDD), I examine how narrowly winning reelection impacts criminal activities that are typically dominated by criminal organizations. This design allows for more localized focus and a more precise understanding of the mechanisms at play. I find that, for mayors in places where criminal groups operate, winning reelection decreases homicide rates, while increasing other acts of violence such as kidnapping and femicide. While these results beg further investigation, the two empirical strategies presented here provide a fuller picture of the impacts of the reform.

This paper builds on the work of scholars such as Trejo and Ley (2019), Blume (2017), and Felbab-Brown (2021a) by exploring when and why criminal groups use violence against political figures. In particular, it adds an understanding of how institutional change can affect the behavior of criminal groups and of the state – perversely incentivizing stable relationships and depressing violence (Ch 2022). This paper also adds further analysis to how these groups engage in state capture when directly competing with each other, which is of increasing concern as criminal groups continue to fragment.

Second, this study expands our understanding of how organized criminal groups can corrupt the political process through both money and violence (Schedler 2014). This also builds off of studies of the effects of institutional interventions on illicit political activities, particularly in the presence of spillovers between units (e.g., Ichino and Schündeln 2012; Callen and Long 2015; Asunka et al. 2019). By controlling who can run for office and who wins – and indirectly controlling the narratives and discussions of political actors, criminal groups can have reverberating impacts on the political process and individuals' engagement with it (Hiskey, Malone, and Diaz-Dominguez 2020).

Endogenously, these groups can further shape institutions and politics once they have

captured offices to further empower themselves (Koivu 2018). Finally, this paper enriches the literature on criminal violence and criminal governance and interactions with the state in Latin America, such as the works by Blattman et al. (2021) and Magaloni, Franco-Vivanco, and Melo (2020) and Magaloni et al. (2020). It also helps highlight the unintended consequences of political reforms on criminal violence, building on Di Salvatore (2019).

2 Criminal Groups and the Electoral Process

Scholars of organized criminal groups have highlighted the frequency with which criminal groups engage in the political process, despite their lack of overt political identity or ideology (e.g., Olivieri and Sberna 2014; Trejo and Ley 2019; Daly 2021). Examples of this engagement come in a variety of forms, including vote buying, coercion, illicit financing, and killing candidates, all for economic gain in both the illicit and legal markets. Despite the plethora of strategies, the most critical to success is the complicity – bought or forced – of public officials (e.g., Barnes 2017; Trejo and Ley 2019; Di Cataldo and Mastrorocco 2022). This complicity allows a criminal group to influence setting, controlling, and enforcing policy choices through negotiated deals with officeholders.

Sometimes called “infiltration” or “capture” of local offices, this complicity enables criminal groups to reap substantial new resources, including arms, intelligence, and state power (Snyder and Durán-Martínez 2009). It can lower the costs of doing business, be provided protection from prosecution and from rivals, and have new business opportunities open up. Elections – when elected officials may move in and out of office – serve as a moment in time when these deals may be re-struck and a new bargaining table between criminal groups and politicians may be established (Dal Bó, Dal Bó, and Di Tella 2006).

By colluding with officeholders, criminal groups can capture the command of local police, including enforcement routes, intelligence, and connections to the hierarchy of security forces (Dell 2015). They can determine municipal budgetary allocations, access to government contracts, and direct internal revenue streams. Criminal groups can influence policy decisions, fundamentally shaping local politics. Their goal is, at the end of the day, to manipulate policy decisions in their favor, essentially governing an area themselves (Dal Bó and Di Tella 2003; Chacón 2017; Trejo and Ley 2019).

In Italy, for example, capture by organized crime caused more municipal funds channeled to criminally-associated sectors, with less money for police and tax collection (Di Cataldo and Mastrorocco 2022). In Mexico, organized crime reportedly appropriated 30% of the municipalities’ annual budgets for public works, demanded that public works contracts be awarded to companies under their control, and collected 20% of the nominal salaries of local

bureaucrats (Trejo n.d.). They were further able to get information on businesses to be extorted, as well as gain access to police intelligence and control their movements. One mayor from Michoacán, Mexico, recalls this about organized criminal groups: “we have to pay them ‘interest’” (Aristegui Noticias 2013).

In some situations where criminal groups are the dominant force in the local illicit markets, the capture of local officials may lower violence, following an agreement for a pseudo-peace accord with the group in exchange for resources (Felbab-Brown 2020a). For example, such situations have occurred in places such as El Salvador, Colombia, and Haiti (Sosa 2017; Staniland 2015; Felbab-Brown 2021a). In other situations, however, where criminal groups compete, political competition for office leads to increases in violence (Arias 2017; Snyder and Durán-Martínez 2009). Similar dynamics occur in countries such as Brazil, Jamaica, and South Africa (e.g., Trudeau n.d.; Arias 2017; Shaw and Thomas 2017).

While state and federal offices wield the most power, municipal offices are most vulnerable to capture by criminal groups (Ingram and Costa 2019; Trejo and Ley 2019; Daly 2021). Importantly for most groups, illicit trafficking occurs on the municipal level (Dell 2015). To maintain their routes and profits, it is critical for groups to co-opt the officials who oversee these activities. In some cases, it may be more effective to buy-off local officials, while in others, resources may be better applied to colluding with national figures. Finally, the institutional features of municipalities, such as concentrated power in the mayoral seat or guaranteed incomes may further make municipalities more attractive targets for capture (Chacón 2017).

Criminal groups engage in local politics on two fronts: directly lobbying officeholders and candidates and indirectly coercing voters. For the former front, criminal groups, like an interest group, may directly offer a politician a bribe in exchange for their cooperation. Like an investment, this exchange of support is expected to return higher rewards, such as access to municipal contracts, state and federal revenue, and protection from local police (Chacón 2017; Trudeau n.d.). In exchange for this fulfillment of debt, the politician may be able to negotiate for their preferences, such as funding or voter needs. Notably, the nature of the directionality of who is driving this relationship may be unclear at times.² Politicians may be as incentivized to seek out these collusive relationships as groups are, often blurring the dynamics of the relationship.

As part of their bribe, criminal groups may invest in elections by funding the campaigns of their preferred candidate (Schedler 2014; Blume 2017). Institutional regulations and norms vary in the amount and method this occurs across the globe. For example, in Mexico, campaign budgets have statutory caps which vary by municipal laws and by party,

²See Trudeau (n.d.) for a deeper discussion on the diverse directionality of this relationship.

depending on electoral strength. For example, in Michoacán, the average amount allowed to mayoral candidates from public and private sources was 333,921 pesos (approximately \$16,730) (ICG 2021). However, candidates have reported this is an insufficient amount to win. One campaign organizer stated “If you want to stand a chance, think 10 million [pesos, or about \$500,000] and above...Many candidates will spend 15 to 20 million [pesos, or about \$750,000 to \$1 million]” (ICG 2021). This need for finances may incentivize politicians to work with, and even seek out ties to criminal organizations in order to get elected. Criminal organizations reportedly gave millions of pesos to local candidates across the same region.

Criminal groups also engage in vote buying, in providing small packages of cash, staple supplies, and small goods to prospective voters in exchange for their ballot (Daly 2021; Trudeau n.d.). They also use threats and violence to coerce voters, “advising them at gunpoint to make the right choice” (ICG 2021). They have blocked access to the polls for supporters of particular candidates and stolen ballot boxes to impact the outcome of elections (Muno, Faust, and Thunert 2020). All of these strategies may be employed by a criminal group to engage with and influence local officeholders and local politics.

These strategies are generalizable to a whole host of armed, non-state groups which engage in the political process (e.g., Carey and Mitchell 2017; Aliyev 2016; Turnbull 2021). Just like militias, armed political wings, and rebel groups in places like Nigeria, Pakistan, and the DRC, criminal groups seek to mobilize voters and influence the outcomes of elections. Their primary difference, however, is that criminal groups are primarily (although not exclusively) profit-driven, while the predominant goal of other groups is ideological or identity-driven.

2.1 Criminal Violence and Elections

Reciprocity, corruption, and non-violent coercion may be the preferred strategies for some criminal groups to capture officeholders, but they are not the only options (Olivieri and Sberna 2014). These groups can also employ violence and threats to coerce an officeholder into submission. For their use of this strategy, Dal Bó and Di Tella (2003) calls criminal groups a “nasty” type of interest group. When bribery is unsuccessful, a group may turn to violence (*plomo* or lead). This violence may be simultaneously offered to the officeholder with the bribe, putting both choices on the table – accept and take the bribe, or reject it and face the consequences.

The use of violence against officeholders and candidates may include direct threats, indirect attacks, such as the burning of campaign buildings, and direct attacks against the politician and their family. The goal of the attacks may be to influence a politician’s stance

on a certain policy, to coerce them into an agreement with the group, or to stop them from challenging an existing political connection. Schedler (2014) calls this last goal “candidate cleansing,” where criminal groups use violence to ensure that their preferred (captured) candidate wins by attacking that person’s rivals.

This violence threatens any and all who might hold power. Cristina Delgado, for example, in Oaxaca de Juárez, had been planning on running in opposition to the mayor (Diaz 2021). In January 2021, a message for Delgado was found in the main square of the municipality, along with a severed pig’s head, reading: “This is my turf and it has a boss. I’ll kill you when you show up.” She did not ultimately register to compete in the election. Rosen, Bagley, and Chabat (2019) report that in Chihuahua alone, more than eighty candidates for various offices dropped out of their races in 2018 due to direct threats. The true extent of these occurrences, however, remains unclear. Importantly, while threats of violence are often credible, they may be insufficient to alter political outcomes in some cases. Lethal violence, then, may be seen as a final and un-rejectable form of coercion.

In some places, the power of criminal groups and their use of violence is widespread. For example, in Morelos in 2021, federal investigators found that top officials in between half and two-thirds of all municipalities in the state had ties to organized criminal groups (Sieff 2020). The U.S. Department of Defense puts the number around 30% across Mexico (VanHerck 2021). The evidence provided included phone conversations between officials and cartel leaders, as well as videos of mayors being threatened if they did not cooperate with cartel gunmen. In 2017, federal authorities released a video showing the mayor of Mazatepec (Morelos) being threatened by armed gunmen (Sieff 2020). “We want you to cooperate,” an armed man says in the video. “I’m not going to be brave,” the mayor responds. “You do your work and I’ll do mine.” The current mayor of Apulco in Zacatecas has received so many death threats she governs entirely over the telephone from an undisclosed location. “I decided I had to protect myself,” she said in an interview in 2021.

2.2 Competition and Violence

Criminal groups may favor threats and violence over bribery when the territory is more valuable and when they are competing with other illicit actors. The more valuable an area is to control, the more a criminal group may be willing to invest to ensure its capture, in terms of both violence and bribes. Violence, however, may be a more effective investment when bribery fails. For example, territories that receive significant federal funds may be more attractive to control. With higher payoffs for the taking, groups use violence against elected officials and candidates with more frequency to ensure their cooperation (Trejo and Ley

2019). Similarly, increased violence against politicians has been associated with increases in the value and availability of resources in Colombia (Angrist and Kugler 2008; Chacón 2017).

Second, criminal groups may employ more violence against politicians when they are competing with rivals for control of an area. As competing criminal groups offer bribes and threats to the officeholder, the price of the necessary bribe increases to beat the “outside” option – the offer of the rival (Dal Bó, Dal Bó, and Di Tella 2006). As the bribe becomes more expensive, more groups prefer to exercise the relatively cheaper action of violence, creating a substitutary relationship between the two (Pulejo and Querubín n.d.). The empirical evidence of the effect of criminal competition on violence is widespread, both in the Mexican context and beyond (Rios 2013; Blume 2017; Trejo and Ley 2019).

Finally, political competition may fuel violence both directly and indirectly. For the former, political competition increases the variability of the outcome of an election. There is more opportunity to remove and replace the officeholder, and criminal groups seeking to wrestle control of territory from a rival may exploit the electoral weakness of their candidate (Dell 2015; Ingram and Costa 2019; Trejo and Ley 2019). While this may be through the use of violence, it may also be through other strategies, such as campaign financing and vote buying. Morris (2009) and Blume (2017) find that as political competition increases, so do illicit donations by criminal groups. Criminal groups may also be directed by the mayor themselves to attack political rivals, acting as a paramilitary group on behalf of the incumbent (Daly 2021).

The effect of political cleavages and differences extends beyond the local level. The partisan relationship between local and state, and state and national governments may influence the efficiency of federal governments. When municipalities are politically misaligned with state and federal forces, criminal groups enjoy *political opportunities* to attack politicians. Partisan misalignment means that incumbent parties have little control over subnational opponents, aggravating existing political cleavages (Gibson 2005). Federal and state actors, who can provide additional funds, resources, and protection, may not have an incentive to do so to shield opponents from violence.

In the Mexican context, this materializes as attacks in opposition municipalities in leftist states, who are misaligned with the conservative federal government (Trejo and Ley 2019), and against PAN-opponents during PAN rule (Dell 2015). Ingram and Costa (2019) find similar effects of partisan misalignment in Brazil, where leftists aligned with the federal government were more secure. This may imply that this is less driven by ideological ties or goals, but rather by the connections between criminal groups and the state. Of course, the effects of political misalignment spillover beyond political and criminal violence, and have been studied in social unrest, economic practices, and prosecutorial choices (e.g., Bhavnani

and Lacina 2015; Sánchez and Palau 2006; Conaghan 2012).

Indirectly, political competition also changes the fundamental nature and structure of organized criminal groups. In the absence of competition, the state can make credible commitments to criminal groups wishing to make a profit and buy protection (Snyder and Durán-Martínez 2009). Reliable, durable relationships can be formed. With competition, however, these promises are less credible, protection rackets are eroded, and violence between criminal groups and the state increases (Villarreal 2002). With shorter horizons and more variability, how criminal groups interact with the state – and with each other – changes.

A sharp example of this was in Mexico at the turn of the century, when the country left one-party rule behind, and there was a sudden influx of misaligned partisans at the state and local levels. During the one-party rule, while the same individual could only hold office for a single, three-year term, the party would reliably be in power after the next election and patronage networks could be developed and strengthened over time (Snyder and Durán-Martínez 2009; Villarreal 2002). Thus, by striking deals with the state, criminal violence remained low. As the PRI began to lose power, however, losing major offices in the 1990s, these credible protection rackets were fractured and fragmented (Snyder and Durán-Martínez 2009). At the same time, criminal violence also increased (Villarreal 2002).

While the previous literature often makes a sharp distinction between criminal and political, the line is often blurry. Felbab-Brown (2021a) recounts this story of organized criminal groups competing for control of a local mayor in the state of Morelos:

“After recent elections, several pickup trucks loaded with men armed with assault weapons pulled up next to the house of the recently elected new mayor. They entered his house and told him that all law enforcement action by municipal police forces would have to be cleared with the cartel and directed only against its rivals, and 20 percent of all public spending in the municipality would have to be handed over to the cartel; otherwise, he and his family would be killed. Although the mayor informed state authorities in the capital of Morelia, they failed to provide him any meaningful support: No state police officers were stationed in the municipality...Several days later, I was told, the mayor received a message from a rival criminal group not to obey the first cartel, not to target their criminal group, and to hand a portion of public spending to them instead. His sense apparently was that he could absolutely not trust the municipal police to defend him as he considered it to be infiltrated by at least one of the criminal groups.”

In a similar event, Erick Ulises Ramírez Crespo was a mayoral candidate of the leftist *Movimiento Ciudadanos* (MC) in Cocula, Jalisco, when multiple assailants open fired during

a campaign rally in 2021 (Amapola Periodismo 2021). Ramírez survived the attack, and claimed the assailants were acting on behalf of the current mayor, Carlos Alberto Duarte Bahena (Morena), who was running for reelection. Two weeks prior to the shooting, Ramírez had filed a complaint with the State Attorney General's Office, where he claimed he had been receiving death threats from a group of armed people who he believed were in the service of the current mayor and sought to prevent him from winning office (Díaz 2021). Ramírez himself served as mayor from 2015 to 2018, during which time he was detained by federal forces for several months due to his alleged connections to the criminal group *Los Guerreros Unidos* (Amapola Periodismo 2021).

Importantly, there are long-lasting and far-reaching effects of the engagement of organized crime in politics. For example, Alesina, Piccolo, and Pinotti (2019) find that Italian members of parliament, especially those of traditionally anti-Mafia parties, are less likely to publicly oppose the organization following violence by the same group. In engaging in elections, criminal groups can set boundaries on what can and cannot be discussed in the political realm, thus decreasing the quality and strength of democratic practices on all levels of the government (Gambetta 1996; Schedler 2014). These groups can change the fundamental nature of the political system, including who can engage with it, what they can engage with and how they can participate.

3 Reelection, Party Competition, and Criminal Presence

3.1 Winning Reelection

How does the introduction of reelection affect the relationship between state actors and criminal groups? I argue that reelection can increase the incentives for both criminal organizations and politicians to form a collusive relationship. After reelection occurs, it can also increase the efficiency of that collusion, and both actors can secure their own power. Because an incumbent may enjoy electoral support from a criminal organization, through both bribery and violence, she may have an incentive to collude with that group to win reelection. This incentive may be strongest when multiple parties are competing for power. Then, once in office, the incumbent has a longer period of time to make credible commitments to the group, learn how to navigate local politics, and consolidate her own political power. In exchange for its support, an aligned criminal group may be able to use its collusive relationship with the incumbent to maximize its control over local illicit markets.

When incumbents can run for another term, their behavior in office may change. They

may claim credit for electoral benefit (Ferejohn 1986; Persson and Tabellini 2000; Motolinia 2021), use their office to influence electoral outcomes (Larreguy, Marshall, and Querubin 2016; Rueda and Ruiz 2020), or elicit campaign donations from powerful groups (Harstad and Svensson 2011). Criminal groups, with large sums of money, coercive capacity and incentives to collude with state actors, can be useful, albeit dangerous partners. Collusion for electoral gain may undermine the democratic preferences of voters, and an unpopular politician may be successful. Thus, reelection can be a double-edged sword – simultaneously cementing a continuous hold on power while also embracing the ideals of democratic accountability.

Institutional incentives be powerful motivators for a politician to collude with a criminal organization (Malik 2018; Daxecker and Rauschenbach 2023; Trudeau n.d.). Strict campaign finance regulation can increase the relative value of an illicit partner, particularly when campaigns are costly. In Mexico, for example, campaign budgets have statutory caps that vary by municipal laws and by party, depending on electoral strength. In the most recent election, for example, the average amount that mayoral candidates in Michoacán are permitted to spend from public and private sources was 333,921 pesos (approximately \$16,730 USD) (ICG 2021). However, candidates have reported this is an insufficient amount to win. One campaign organizer stated “If you want to stand a chance, think 10 million [pesos, about \$500,000 USD] and above...Many candidates will spend 15 to 20 million [pesos, about \$750,000 to \$1 million USD].” In 2021 alone, criminal organizations reportedly gave millions to local candidates across the same region.

When one party consistently dominates office, reelection might not bring the same incentives. Instead, the underlying structure of political power may remain stable. Mexico, for 70 years, was a prime example of this. Despite holding office for a single term, party members could reliably rotate between roles, party promises could easily be enforced, and the PRI could remain consistent and predictable regardless of personnel changes. When criminal groups operate in places where party power is stable, then what added stability is created by reelection may only further entrench each (Snyder and Durán-Martínez 2009; Trejo and Ley 2018; Durán-Martínez and Soifer 2021; Hernández 2013). The introduction of reelection in a monopolistic case, therefore, might not bring the same risks of losing control that a competitive reelection race does.

Facing uncertain electoral outcomes, one strategy that criminal groups employ is to shape the electoral pool itself. Using bribes and violence, they can not only establish a collusive relationship with an allied politician, but they can also remove that candidate’s political challengers. This includes bribing, threatening, or attacking others to drop out of the race, alter their platforms, or otherwise conform (ICG 2023). A criminal organization can use its coercive capacity to ensure that its preferred candidate wins, and once that person is in

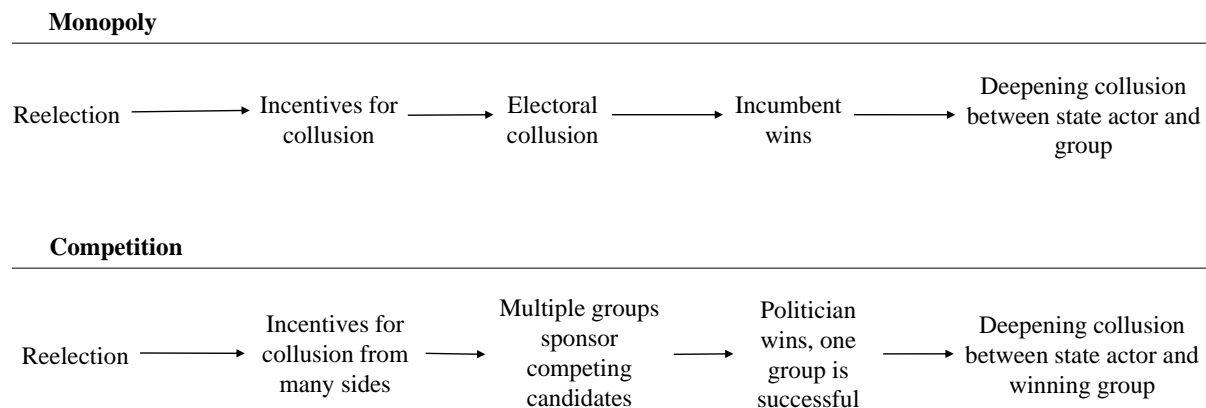


Figure 1: Visualization of Causal Mechanisms, conditional on criminal presence

office, the organization has little incentive to attempt to remove her. This collusion would lead to a decrease in violence against rival politicians. Therefore, I hypothesize:

Hypothesis 1a: – *Reelection will incentivize collusive relationships between criminal groups and some politicians, decreasing violence against politicians.*

However, when multiple parties are competing for control, there may be more incentives for aligned politicians and criminal groups to try to disrupt the political system and install their own politician in office. Violence against politicians is a common and critical strategy in doing so (Iqbal and Zorn 2008; Blume 2017; Trejo and Ley 2018). Competing groups may channel more funds into elections, raising the investments and the stakes (Schedler 2014). As politicians hold office for longer, they may be able to become more monopolistic in their control, relying on personalistic appeal. Over time, they may become more like uni-party territories. A visualization of these causal mechanisms is shown in Figure 1. Therefore, I hypothesize:

Hypothesis 1b: – *Reelection will incentivize competing collusive relationships between criminal groups and some politicians, increasing violence against politicians.*

A visualization of the empirical expectations of the effect of the introduction of reelection on violence against politicians is shown in Figure 2.

| | SHORT-TERM | LONG-TERM |
|-------------|-----------------|-----------------------------|
| COMPETITION | $+$ Positive | $-$ (Weakly) Negative |
| MONOPOLY | $-$ Negative | $-$ Negative |

Figure 2: Expected Effects on Violence against Politicians

3.2 Holding Office After Reelection

Once the collusive politician wins office, she can then use that new-found power to secure the power of any supportive groups (Acemoglu, Robinson, and Santos 2013; Nieto-Matiz 2022). In the context of criminal collusion, this can be through collusion with local security forces to further monopolize and regulate illicit markets, through increased protection from prosecution and access to state intelligence on criminal rivals. Because the incumbent occupies office for multiple terms, any commitments she makes for future policies can be more credible and enduring. She can learn to navigate bureaucracy more efficiently and form important connections. The longer a politician holds office, the closer their ties with criminal groups, creating a more stable relationship (ICG 2023).

As time goes on, collusive criminal groups can solidify their control over territory and illicit markets. For groups that are already dominant, this can mean squeezing out or taking over smaller groups, confronting larger ones, and expanding into new markets to increase profits. Since they are aligned with the incumbent, a criminal groups can work their collusive relationship with the state to ensure their rivals are arrested, prosecuted, and repressed. With time, collusive groups can use state power to eliminate all their rivals, becoming the sole dominant group.

Hypothesis 2: – *Reelection will allow an incumbent and aligned criminal group to consolidate control over their respective markets.*

To summarize, I argue that reelection will increase the incentives for politicians to collaborate with a criminal organization to win reelection. For unpopular candidates who risk losing power, particularly if they face partisan alternation, this may be an attractive offer.

Then, once an incumbent wins reelection, they can repay the criminal group by helping them consolidate power over illicit markets. Simultaneously, an incumbent may work to maximize her own political power.

This theory is most likely to hold in places where violence is relatively low cost. This may be in terms of risk of prosecution, impunity, or attention. For example, in Nigeria, Brazil, and Haiti, impune criminal groups are closely tied to party elites and both political and criminal competition frequently involves violence (Ojanyi and Chukwuemeka I. 2020; Felbab-Brown 2021b). In Mexico, criminal groups often also employ *sicarios* or hitmen-for-hire to conduct their acts of violence, giving them a degree of separation from the violence and lowering the costs (Alvarado 2021). Further, parts of this theory may be more relevant where groups are competing for territorial claims rather than permanently embedded.

4 Research Design

To examine the effect of the introduction of reelection on criminal-politician relationships, I employ two approaches. First, I exploit the staggered implementation of a reelection reform and examine its effects on violence against politicians. This difference-in-differences (DiD) design allows for a big-picture view of the effects of the institutional change. As discussed in more detail below, this reform allowed state legislatures to decide when and if mayors could run for another consecutive term. Critically, states approved the reform in four waves. In 2015, nearly half of the states (15 out of 32) approved the reform. The following year, another nine followed. In 2017, one more state did. By the time of the 2018 election, six states had not yet approved the reform.

Then, to examine the more localized effects of holding office, I implement a regression discontinuity design (RDD), focusing on the elections only in places where the reform was approved. There are many reasons that an incumbent may win or lose an election, many of which may be connected to their criminal-politician relationships. To mitigate this, I examine only narrow winners and narrow losers, comparing the average number of reported criminal activities under the electoral outcomes. This research design allows for a more focused investigation of the consequences of holding office after reelection. By pairing these two natural experimental approaches together, I hope to be able to examine the fullest picture of this reform and its effects. In the following sections, I describe the reform and each research design in more detail and discuss their empirical findings.

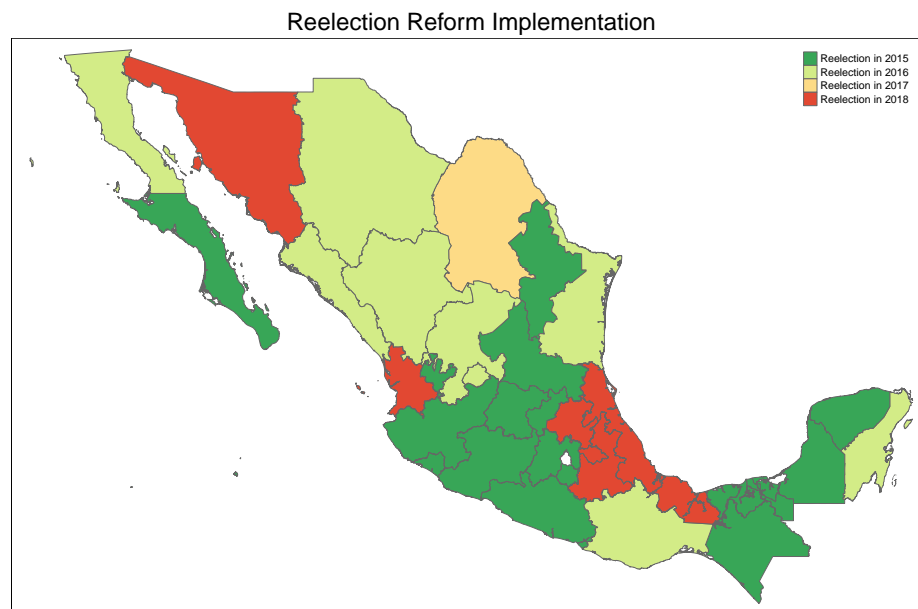


Figure 3: Reelection Reform Implementation

4.1 Reelection Reform

For nearly a century, the Mexican government’s reelection policy could be effectively summarized by the slogan “*sufragio efectivo, no reelección*”, (“effective suffrage, no reelection”) (Coelho 2010). In 2014, however, Pres. Peña Nieto (PRI) proposed and passed a constitutional reform to change this long-standing policy, permitting state and federal legislators to run for reelection, and allowing state legislatures to choose to permit mayors to seek at least one more three-year term (Peña Nieto 2014). This was a reform, drafted in part, with the collaboration of two other major parties – PAN and PRD (Ch 2022; Motolinia 2021). In total, mayors could be permitted to run for up to four total terms, depending on the legislature’s choice (Navarro 2018). The offices of the president and the governors maintained the anti-reelectionist policy.

While individuals were unable to run consecutively before 2018, state legislatures could start approving the measure sooner. Starting in 2015, states began to approve the measure, with the majority of the states doing so in 2015 and 2017. A few more states approved the measure in 2018, but the effects of the reform would not be enacted in those states until the election in 2021. Finally, a few states were set to vote on the reform in 2020 in anticipation of the upcoming election but were delayed by the COVID-19 pandemic. See Figure 3 for a visualization of this timing.

By the time of Election Day in 2018, when the presidency and federal, state, and local

offices were decided, the reform for mayors took effect in only some states. For federal legislators, the reform became active across the country in the same election (Ch 2022).³ The states which did not permit reelection in 2018 were Puebla, Sonora, Hidalgo, Nayarit, Tlaxcala, and Veracruz. Both Puebla and Sonora approved the measure in 2018, but the impact was not adopted in time for that year's election.

Officially, the reform was designed to incentivize elected officials to complete long-term projects to help their communities, particularly infrastructure investments, and to give them time to learn the ropes of the political system (Agren 2014). Unofficially, however, the nature and timing of the reform was the result of strategic political moves. The timing of the reform has been attributed to the timing of state-level elections (Motolinia 2021). When state legislatures and governors faced an election after the reform but prior to the period when the reform took place, they were likely to pass it, as it improved their own electoral chances. Mayoral reelection was tied to this vote by construction, and mayors were unlikely to have selected into or out of the treatment. Other characteristics of the reform, such as the party lock requirement and energy sector changes have been attributed to inter-party negotiations between the PRI, PAN, and PVEM (Ch 2022), as well as attempts by PRI to hold onto local offices (Resendiz 2016). The reform itself was massively unpopular, with widespread concerns of increased corruption to fund reelection campaigns (Peza Berríos 2018).

4.2 Difference-in-Differences

4.2.1 Sample, Treatment, and Outcomes

There are thirty-one states in the country, excluding Mexico City, each of which is comprised of municipalities of varying size and population. Some states, like Baja California, have five municipalities, while others, like Jalisco, have hundreds. Each municipality has a municipal seat which is the locus of local government. In total, there are 2,446 municipalities, each of which elects a mayor or municipal president for a three-year term. Following approval of reelection, mayors could run for up to four consecutive terms, depending on the state's legislature. Of the municipalities in this sample, reelection for at least two consecutive terms was permitted in the 2018 election in 1,597 of them (Madero Preciado 2018).⁴

The theory examined here is focused only on behaviors in and around election periods, as the violence (or lack thereof) is motivated by electoral change. I remain agnostic about the impacts of the reform on *non*-electoral politics. Ordinarily, this could be accomplished

³Mexico City is not included in this study as they underwent significant and unique changes to their electoral system during the same reform.

⁴Some municipalities were excluded from this study as they employ a different electoral system from the rest of the country. I focus only on municipalities that use plurality rule (see Appendix A for more).

by looking at election-year results. However, due to differences in timing across states, this would make clean comparisons both extremely rare and difficult to interpret. Before the 2018 reform, each state held elections according to the electoral cycles set by the state legislature. Therefore, many states held elections on different years, making state-election-year-level comparisons impossible in many cases. For example, while we can compare outcomes in Veracruz and Tamaulipas, who held elections in the same years (2013 and 2016, pre-reform), we cannot compare them with Guerrero and Michoacán, who held elections in 2012 and 2015. While the reform was supposed to coordinate all elections on the same day, starting in 2018, it did not do so perfectly. Some states, such as Aguascalientes and Baja California, continued for another cycle, and two states (Durango and Hidalgo) continue to be misaligned with the national election day.

To reflect this, the unit of analysis in this study is election-bins, where a bin is a three-year period in which each state held exactly one election. This allows us to retain the focus on elections while also making valid comparisons. Figure 4 visualizes these bins. Each cell is a state-year, and each bin is blocked off, where every state held one election within that bin. The timing of each election that was held in a state is represented by a 1. The green cells, starting in 2015 and appearing as late as 2018, represent the timing of the state legislature's approval of the reform. However, the approval did not take effect until the 2018 election. Therefore, the red line between 2017 and 2018 represents the timing of treatment for the treated units. Visually, this provides an informative signal about the timing of the reform – state legislatures entirely approved the reform when they were facing an immediate election. This allowed them to run for another term and maximize their value from office, supporting the explanation by Motolinia (2021).

The timing of the treatment is also not as clearly defined in the way that an experimental study would produce. While state legislatures started approving the reform according to when they would be eligible to run, this reform did not take effect until the 2018 election at the end of June. This means that in 2015, an incumbent could not run, while her successor who took office that year might or might not have known about the reform, depending on what state she was in and the exact timing within the year of the legislative action. Then, if reelection is approved, the politician elected in 2015 may choose to run again with the same party, however, she would not be eligible to do so until the election in 2018.

There are two imperfect options for treatment. The first option would be to define treatment as starting when the reform was approved by the state legislatures, despite it not taking effect. In the example above, this would mean that the politician who takes office in 2015 will be considered treated, regardless of whether she knows it. This encompasses when politicians and criminal groups could feasibly start to learn about the future institutional

| State | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
|---------------------|------|------|------|------|------|------|------|------|------|------|------|
| Aguascalientes | | 1 | | | 1 | | | 1 | | 1 | |
| Baja California | | 1 | | | 1 | | | 1 | | 1 | |
| Baja California Sur | 1 | | | 1 | | | 1 | | | 1 | |
| Campeche | 1 | | | 1 | | | 1 | | | 1 | |
| Chiapas | 1 | | | 1 | | | 1 | | | 1 | |
| Chihuahua | | 1 | | | 1 | | 1 | | | 1 | |
| Coahuila | | 1 | | | | 1 | 1 | | | 1 | |
| Colima | 1 | | | 1 | | | 1 | | | 1 | |
| Durango | | 1 | | | 1 | | | 1 | | | 1 |
| Guanajuato | 1 | | | 1 | | | 1 | | | 1 | |
| Guerrero | 1 | | | 1 | | | 1 | | | 1 | |
| Hidalgo | 1 | | | | 1 | | | | 1 | | |
| Jalisco | 1 | | | 1 | | | 1 | | | 1 | |
| Mexico | 1 | | | 1 | | | 1 | | | 1 | |
| Michoacan | 1 | | | 1 | | | 1 | | | 1 | |
| Morelos | 1 | | | 1 | | | 1 | | | 1 | |
| Nayarit | | | 1 | | | 1 | | | | 1 | |
| Nuevo Leon | 1 | | | 1 | | | 1 | | | 1 | |
| Oaxaca | | 1 | | | 1 | | 1 | | | 1 | |
| Puebla | | 1 | | | | | 1 | | | 1 | |
| Queretaro | 1 | | | 1 | | | 1 | | | 1 | |
| Quintana Roo | | | | | 1 | | 1 | | | 1 | |
| San Luis Potosi | 1 | | | 1 | | | 1 | | | 1 | |
| Sinaloa | | 1 | | | 1 | | 1 | | | 1 | |
| Sonora | 1 | | | 1 | | | 1 | | | 1 | |
| Tabasco | 1 | | | 1 | | | 1 | | | 1 | |
| Tamaulipas | | 1 | | | 1 | | 1 | | | 1 | |
| Tlaxcala | | 1 | | | 1 | | | | | 1 | |
| Veracruz | 1 | 1 | | | | 1 | | | | 1 | |
| Yucatan | 1 | | | 1 | | | 1 | | | 1 | |
| Zacatecas | | 1 | | | 1 | | 1 | | | 1 | |

Figure 4: Electoral Bins with election and reform timing (2012-2022)

shift and change their behavior accordingly. The second option would be to define treatment as starting at the beginning of 2018, at the beginning of the legally defined campaign period. This may more closely reflect the underlying institutional change of interest, as we can more clearly isolate the change as the key moving key piece in outcomes. However, this also risks that criminal groups may act pre-emptively and alter their behavior before the reform became active. Faced with the tradeoff between threats to the no-anticipation assumption and threats to clarity of treatment, I have chosen the first option. While a staggered treatment may be more noisy, it is also less likely to violate key assumptions of the research design and provide insights into causal effects.

Once a unit is treated, it remains treated. To estimate the causal effects, I compare the newly-treated units to those which have not yet approved the reform at that time, comprising the control group for that bin. It is important to avoid “bad comparisons,” where newly treated units are compared to those which have already been treated (Callaway and Sant’Anna 2021). To use a more flexible estimation strategy and examine heterogeneous effects, I achieve this by stacking the dataset, which removes bad comparisons and circumvents the issues of produced by using TWFE estimators (Baker, Larcker, and Wang 2022; Cengiz et al. 2019; Ch 2022; Gardner 2022).

Like many measures of the behavior of criminal groups, the dependent variable – violence against politicians – is difficult to perfectly capture. Some practices, like coercion and threats, may be difficult to accurately observe. Therefore, I primarily operationalize this engagement through the most visible method – lethal attacks by organized crime on candidates and incumbents. However, to supplement this data, I will also examine how these dynamics affect the number of candidates, the concentration of votes, and the count of electoral crimes, using electoral data from Magar (2018) and from the National Institute of Statistics and Geography (INEGI). However, these indicators may be less clearly connected to organized criminal engagement. A further discussion of the strengths and weaknesses of these additional measures can be found in the Empirical Results section.

To measure violence against politicians, I collected an original dataset on fatal attacks against local politicians, building from newspaper reports. Collected during 2021 and 2022, this dataset contains the record of fatal attacks against mayoral candidates, pre-candidates, mayors, and former mayors from January 1, 2013, to June 30, 2021. In total, there were 414 recorded attacks. This data was collected by scraping local, state, and national newspaper articles containing keywords relating to assassinations, attacks, mayors, candidates, and former mayors.⁵ The articles were identified using keywords such as “*alcalde*” and “*asesinado*,”

⁵See Appendix B for more information about how this dataset was collected and the coding practices that were used.

as well as cross-referenced with other articles, reports and more limited datasets.

In this dataset, the date of the attack, state and municipality of the attack and of the victim's home, victim's profession and any time spent in office, party affiliation (if applicable), and gender are all recorded. I also recorded the source(s) of the report and a few sentences summary of the details of the attack, including what happened, when, how and to whom, as well as any important comments. These include references to potential perpetrators if the article discussed it, any allegations of corruption or ties to criminal groups, or past experiences of the victim with threats or other attacks. While smaller acts of violence, like threats or arson, might not be covered consistently, fatal violence is likely to be reported, even if only by smaller, more regionally specific papers.

To identify attacks by organized criminal groups, I examine three key indicators. First, if the victim was shot, we can likely associate the attack with organized crime. Guns are significantly more difficult to attain in Mexico than in the United States,⁶ and the use of them is closely associated with the actions of organized criminal groups (Dube, Dube, and García-Ponce 2013). The second indication that the crime was committed by an organized group is that multiple people were involved (Pérez Esparza and De Paz Mancera 2018). Finally, when an individual is kidnapped and taken to a second location before they are killed indicates an organized act, rather than a crime of passion.

Since this dataset was built from newspaper reports, we also must consider how organized crime might influence that reporting. Mexico has one of the highest rates of assassinations of journalists in the world, acts committed both by criminal groups and by state actors (Ahmed 2017). In some places where criminal groups can both engage in politics and control the reporting of journalists, this could present a challenge to this analysis. In such cases, at the highest degrees of criminal engagement, the measure presented here may indicate little engagement, despite killings occurring. Alternatively, criminal groups may actually *encourage* this kind of reporting to maximize its signaling and chilling effects to nearby areas, strategically using the violence for its visible purpose (Brancati and Penn 2022).

To combat this, I used as many outside sources for cross-referencing and verification as I could. After building this dataset, the information was cross-referenced from the *Votar Entre Balas* dataset from CIDE, which has attacks from 2018 to the present, reports from *Alcaldes de México*, the National Mayors Association of Mexico, and the ACLED dataset for Mexico. These sources are somewhat limited in timeframes, but when combined, can increase the confidence in this data. However, it is important to note that this is not, nor does it claim to be, a perfect list of attacks during the period.

⁶There is only one legal gun shop in the country, located in Mexico City, and access to it is heavily restricted by the Ministry of National Defense (Dube, Dube, and García-Ponce 2013).

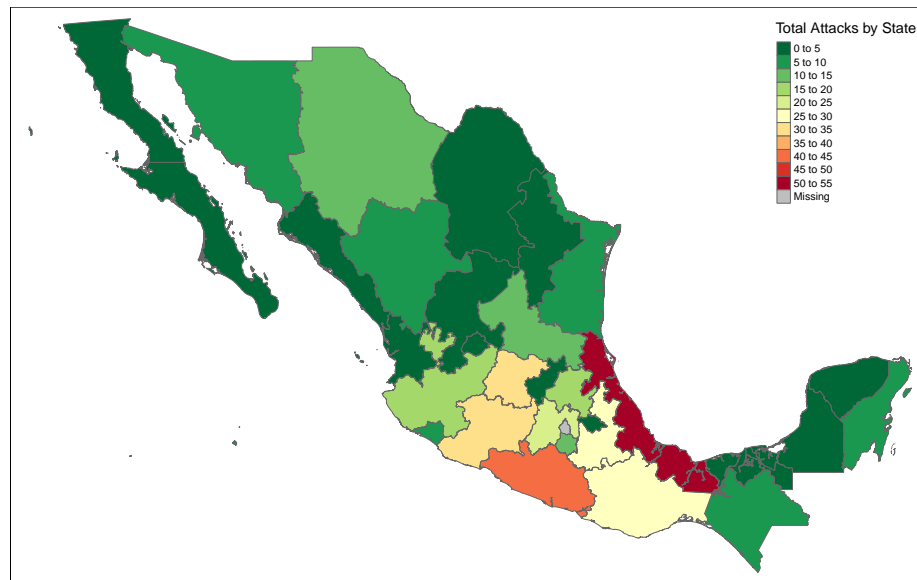


Figure 5: Total Attacks Against Politicians by State

Figure 5 shows the distribution of attacks by state – *Tierra Caliente* in Central Mexico is the most violent in terms of total attacks. When adjusting for population, however, Northern Mexico fares far worse. In Appendix C, I further descriptively examine these attacks by partisan affiliation and gender. In line with previous studies such as Blume (2017) and Trejo and Ley (2018), I find leftist parties under PRI rule were more likely to be targeted. As noted by many journalists and academics, there was a record spike in attacks in 2016 (Grillo 2016).

4.2.2 Effects of Reelection on Violence Against Politicians

The parameter of interest is the group-time average treatment effect – $ATT(g, t)$ – estimated as the average difference between newly-treated units and not-yet-treated ones. However, recent studies such as Borusyak, Jaravel, and Spiess (2021), Goodman-Bacon (2021), and

Butts (2021) have shown that standard, multi-period difference-in-difference estimators with two-way fixed effects can lead to “forbidden comparisons.” This occurs when the early-treated units are used as controls for later-treated ones. As Callaway and Sant’Anna (2021) show, we can define the $ATT(g, t)$ as the average difference between the units that are in the treatment group for that period and the average difference for the units which are reasonable control units. We can formalize this as:

$$ATT(g, t) = E[Y_t - Y_{g-1} | G_g = 1] - E[Y_t - Y_{g-1} | C = 1]$$

where G_g is a dummy variable that takes a one if the unit is in the treatment group g . The first term is the average outcome only for the treatment group, comparing the current outcome with the pre-treatment outcome. The second term is the same comparison for the control group. This is a critical element to account for in estimating event studies, particularly when there are heterogeneous treatment effects. Failing to do so can introduce significant biases into the estimates of effects, resulting in negative weights for some groups and excess weights for others.

In this context, this means that the outcomes for the units in the first treatment group – where the reform was passed in 2015 – should be compared to the non-yet-treated group. Because of their treatment status, these already-treated units should be excluded from future comparisons (Borusyak, Jaravel, and Spiess 2021; Callaway and Sant’Anna 2021; Sun and Abraham 2020). This means that those in the second group should only be compared with those who have not yet passed the reform, while the first group is removed from the estimation. This is achieved by employing a stacked dataset (Cengiz et al. 2019; Baker, Larcker, and Wang 2022; Gardner 2022). In this regression, I control for a range of covariates to address concerns about parallel trends and cluster the standard errors at the state-level. The estimating equation is:

$$Y_{ite} = \beta_1 Reelection_{ite} + \mu \mathbf{X}_i + \alpha_{ie} + \gamma_{te} + \epsilon_{ite} \quad (1)$$

where the outcome here is Y_{ite} , or the observed dependent variable for the municipality i at year t in electoral bin e . The indicator $Reelection_{ite}$ tracks whether the municipality is in a state that approved the treatment for each respective bin (the interaction of treatment assignment and treatment timing), using a binary indicator for when the treatment is turned on for that year and bin. The coefficient of interest is β_1 , which measures the causal effect of the treatment. Then, \mathbf{X} is a matrix of pre-treatment covariates, measured in 2010. These include previous PRI control, population, geographic factors, and partisan misalignment

with other levels of government, and α and γ are state-bin and year-bin specific fixed effects. Finally, ϵ is an idiosyncratic error term.

To my knowledge, there is no perfect, pre-treatment measure of criminal presence that both accurately captures the dynamics of criminal groups in Mexico in 2012 and in 2022. In lieu of that, I use a measure of criminal value – the presence of poppy fields, following (Dell 2015; Chacón 2017). The logic here is that the more illicit value that a municipality has, the more likely they are to have criminal groups operating there. The data on known poppy fields is an original binary measure built from multiple sources, including newspaper articles, military press releases, and reports from NGOs. Since the fall of global heroin prices, this measure may not be as salient, but is likely to be strongly correlated with criminal activity, regardless of which particular group is in the area (Felbab-Brown 2020b; Farfán-Mendez 2021). Not only does their growth bring criminal profits, but criminal groups may incentivize their growth, meaning that it is also a signal of where they are. To do so, groups likely have some degree of monopolistic control to regulate the cultivation of poppies and production of them into raw forms of heroin. Therefore, this is likely to be where groups can enjoy financial gains and solid control (as well as a relatively stable relationship with local state actors).

This data is also not meant to encapsulate every false-negative but to reduce false-positives. That is, there can be places with criminal groups and no poppy fields, but it is less likely that there are poppy fields and no criminal groups. Because this data is subset to estimate the treatment effect, this ensures that we are comparing places that likely have criminal groups to those that likely also have them, reducing concerns about unobserved differences. Further, these fields can be indications of a relatively-time invariant indicator of criminal presence, regardless of what groups are there.⁷ However, due to the geographic limitations of this indicator, it is likely to examine only rural areas. To address this concern, I also employ an alternative indicator of criminal presence in the robustness section.

To measure the ATT, I first examine the staggered difference-in-differences estimates on the full sample of municipalities from 2012-2022. This is shown in Column 1 of Table 1. Then, I subset the data in three ways: I estimate the effect within those municipalities which experienced mayoral partisan alternation (Column 2), within those with known poppy fields (Column 3), and within those municipalities which experienced both partisan alternation

⁷There is also data available from Coscia and Rios (2012) and Castillo and Kronick (2020) for municipality-level data on the presence of criminal groups. This measures Google search results to estimate a count of criminal groups operating within individual municipalities in 2010. This data is impressive in its own right, but may no longer accurately reflect the on-the-ground realities of criminal presence in the country. For example, several groups which were significant national players in the 2010-landscape of the Mexican criminal world are no longer operational. Conversely, the CJNG, now one of the largest criminal groups in Mexico and responsible for a large number of attacks on politicians, did not emerge until the mid-2010s.

Table 1: Treatment Effect on Attacks (Poppies and Party Alternation (2012) Subset)

| | Baseline | Partisan Alternation | Poppies | Partian Alt. & Poppies |
|---------------------|--------------------|----------------------|--------------------|------------------------|
| Staggered Treatment | -0.018+ (0.011) | 0.013 (0.009) | -0.086+ (0.042) | 0.584+ (0.293) |
| Num.Obs. | 7153 | 2175 | 800 | 199 |
| R2 | 0.049 | 0.057 | 0.112 | 0.212 |

Significance levels: + $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

and criminal presence, proxied via poppy fields (Column 4). It is important to subset the data, rather than interact indicators with the treatment to preserve the comparisons between units. This allows for comparisons, for example, between a treated municipality with partisan alternation and a control municipality with partisan alternation.

The first column, the baseline model with the national sample, shows that, on average, municipalities increased a small but significant decrease in violence against politicians once mayors were eligible to run for reelection. In the second column, where the effect of the reform is estimated only on municipalities where mayoral partisan alternation had recently occurred does not show the same effect – instead, treatment does not seem to impact violence against politicians. In the third column, the municipalities with poppies who had a mayor who could run for reelection experienced a 377% decrease in attacks, compared to those municipalities with poppies that had a one-term mayor. Finally, column 4 shows the effect for municipalities with poppies and party competition. There, the introduction of the reform significantly increased attacks against politicians – an effect that was far larger than in other places.⁸

To summarize, the empirical results provide causal, if noisy, support for the theory. Reelection may have had a stabilizing effect on violence against politicians on a national scale, but those pacifying impacts do not seem to hold where criminal groups have a strong presence. However, there remain questions about these findings. How do we know that they are driven by the reform itself? They may be driven instead by simultaneous but unrelated changes to criminal organizations strategies for controlling territory and monopolizing illicit markets. The following section explores this possibility and demonstrates that the reform did not alter other criminal behaviors.

⁸See Appendix D for alternative specifications of criminal presence.

4.3 Regression Discontinuity Design

4.3.1 Sample, Treatment and Outcomes

While the evidence from the difference-in-differences analysis is suggestive of a stabilizing effect, it is not conclusive. A key part of this theory lies in lengthened political horizons for politicians, that when they can hold office for longer periods of time, their promises can be more credible and any collusion with violent interest groups more stable. However, it may not be enough that politicians can run for office – they also need to win reelection. Without electoral success, there is little difference in practice between a one-term politician and a single-term limited one.

There may be distinct reasons that a politician wins or loses a mayoral race, which could be connected to the outcomes of interest (Skovron and Titiunik 2015). Since reelection is not randomly assigned, it can be difficult to determine causal effects through a head-on comparison. However, using a regression discontinuity design (RDD), we can compare the average outcomes in municipalities where an incumbent barely won or barely lost a mayoral race. This means that an incumbent who won within the specified bandwidth is considered treated, while one who lost in the bandwidth is considered a control. The fundamental assumption underlying this empirical strategy is that, for politicians who narrowly win or narrowly lose, reelection is “as-if” randomly assigned, reducing concerns about confounders. There may be few underlying differences between politicians that win by small margin, and those small shifts in electoral outcomes could be attributed to unrelated factors, such as election-day weather or traffic (Eggers and Hainmueller 2009; Fourniaies and Hall 2014; Boas, Hidalgo, and Richardson 2014). Further, the practice of using RDDs to examine the effects of close elections and as-if random assignment of office is a well-examined practice (de la Cuesta and Imai 2016; Cattaneo and Titiunik 2022).

The running variable for this design is the vote share for the incumbent compared with the runner-up. The threshold here is sharply defined at 0 – any incumbent who receives a positive electoral margin won their election, while a negative share indicates that they lost. I only examine this in contexts where mayors were running for reelection, meaning only in the states that approved the reform and following its implementation in 2018. Following best practices, I select the bandwidth in a data-driven, automatic way that minimizes the mean squared error to avoid specification searching and optimize the bias-variance trade-off (Calonico, Cattaneo, and Titiunik 2014). The estimand here is the Local Average Treatment Effect (*LATE*). We can define this as:

$$LATE = E[Y_{1i}|X_i = c] - E[Y_{0i}|X_i = c]$$

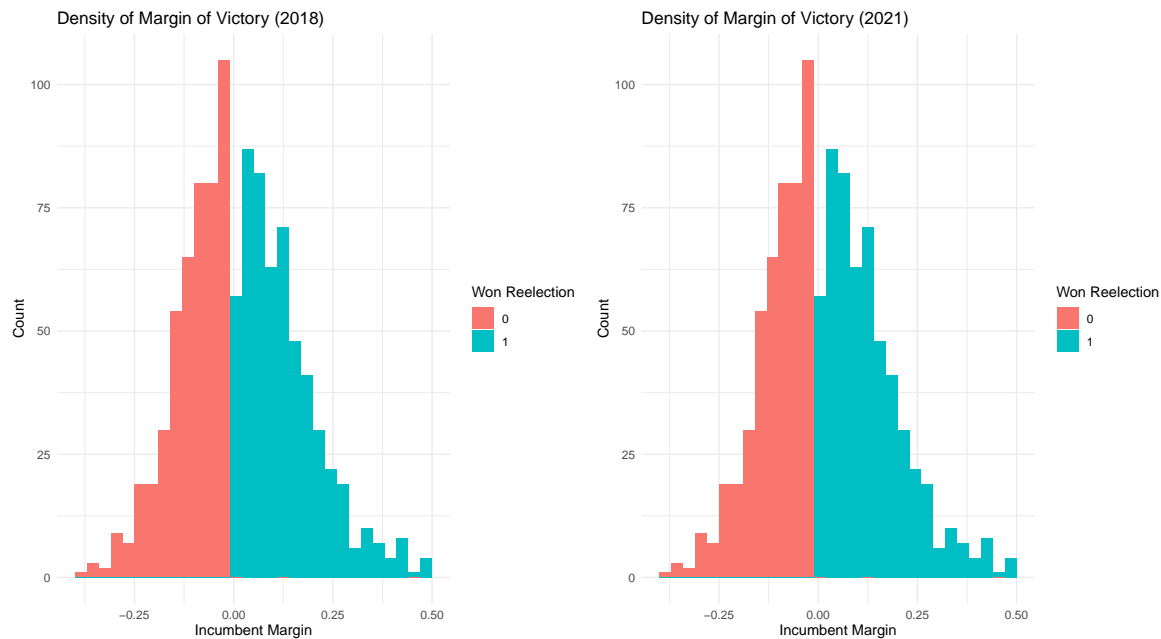


Figure 6: Density of Margin of Victory for Politicians Eligible for Reelection

where $Y_i|X_i = c$ indicates the potential outcome for unit i given the cutoff c . I use a triangular kernel function to construct the estimator. As with any RDD, there must not be evidence that units were able to select into one treatment assignment (sorting) and that there are no discontinuities in other covariates around the cutoff point (Cattaneo and Titiunik 2022). Using the density test discussed by McCrary (2008), there is no statistical difference in the density of winning versus losing candidates, supporting the non-sorting assumption. A visualization of the distribution of this margin is shown in Figure 6.

I examine how holding reelected office impacted six key activities that are both observable and dominated by organized criminal groups: extortion, femicide, homicide, small-scale sale of drugs, business robbery, and kidnapping for profit. These crimes are often committed by smaller, more local criminal organizations, rather than the larger, more powerful ones that are more engaged in electoral violence. However, these groups also co-opt or outsource the control of local markets to these organizations and may control their actions to varying degrees. If these behaviors change when a mayor is narrowly reelected, this indicates that the mayor's political future has an impact on how criminal groups behave and conduct business.

To examine this, I gathered data on the number of reported crimes from the *Secretaría Ejecutiva del Sistema Nacional de Seguridad Pública* (Department of National Security, SESNSP), which is the investigative body of the federal government. They collect the number of investigations from state- and, starting in 2015, municipal-level Prosecutor's Offices and Attorney's General offices. To implement this, I calculated the average number of re-

ports for each type of crime in each municipality bin from 2018-2022 (two bins). To reflect differences in population density, this is calculated as the rate of investigations per 100,000 using populations from the *Consejo Nacional de Población* (National Population Council, CONAPO).

This data is not meant to be a perfect representation of reality. Underreporting, particularly in municipalities where the incumbent is corrupt, is likely a significant problem. However, one advantage of this data is that it includes state and federal investigations as well. While an individual may not be willing to report criminal activity to the local government, they may be more likely to report it to the state-level prosecutor's office or another higher level of government. Regardless, underreporting is likely to bias against my theory, strengthening any results.

4.3.2 Effects of Reelection on Criminal Activities

To examine these effects, I explore how winning reelection shapes the behavior of criminal groups in a municipality. If the theory presented here holds, then when a politician continues to occupy office, then she will be able to consolidate political power, and any aligned criminal group operating in the area will also be able to increase their monopolistic control over illicit markets. The estimating equation for the RDD can be written as:

$$Y_{ite} = \beta_1 Won_{ite} + \beta_2 Margin_{ite} + \beta_3 Won_{ite} * Margin_{ite} + \mu \mathbf{X}_i + \epsilon_i \quad (2)$$

where Won_{ite} is a binary indicator if a mayor won reelection, and $Margin_{ite}$ indicates her electoral margin compared to the runner-up or successor. This margin is positive if she won and negative if she lost. I control for The outcome, Y_{ite} , is the average number of crimes reported in that specific municipality *following* the reelection or narrow lost of the incumbent. For example, a mayor could be first elected in 2015 to govern her municipality. Following state legislative approval, she decides to run for reelection in the 2018 election, winning by a close margin. The outcome, then, is the average reported crimes in her municipality during the 2018-2020 bin. Due to data limitations, I control for partisan alternation, rather than subsetting. Therefore, I remain agnostic about the effects of party competition. Finally, standard errors are clustered at the state-level.

The results of the RDD estimation for the full sample of municipalities where a mayor was running for reelection are shown in Table 2. The estimand of interest (β_3) is in the top row with standard errors in parentheses below. For the full sample, there is little difference in the activity of criminal groups if a mayor wins reelection. The only change is that kidnappings increase when an incumbent wins.

Table 2: RDD Estimates on Criminal Activities (Full Sample)

| Extortion | Femicide | Homicide | Narcomenudeo | Business Robbery | Kidnapping |
|---|--------------------|---------------------|---------------------|---------------------|-------------------|
| 0.0526 (0.1465) | 0.0238 (0.0739) | -0.0706 (0.2526) | -0.9897 (0.9385) | -0.3061 (0.6755) | 0.0662* (0.03) |
| Significance levels: + $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. | | | | | |

Empirically, this model may be flawed. If mayors are systematically winning or losing because of their connections to criminal groups, then the full sample estimate is unlikely to prove insightful. Therefore, it is more informative to compare outcomes in places with criminal presence where the mayor barely won to outcomes in places with criminal presence where the mayor barely lost, as shown in Table 3. Like the full sample, there is an increase in kidnapping for profit, as well as femicides. Importantly, this model shows that when a mayor wins reelection in this context, homicides decrease significantly by 1.5 cases per 100,000 residents.

Many studies have shown that criminal competition significantly increases homicide rates (Durán-Martínez 2015; Lessing 2017; Trejo and Ley 2019). It stands to reason that criminal monopolization may decrease homicide rates, as criminal groups are not violently competing for control, and a vast majority of this homicide rate is driven by inter-criminal violence. Therefore, if, as this theory contents, criminal groups are expanding their control, homicide rates would decrease. However, this requires further investigation to determine if this is the cause or if it is more driven by electoral incentives for the incumbent to crack down on criminal groups after being reelected.

Table 3: RDD Estimates on Criminal Activities (Criminal Presence only)

| Extortion | Femicide | Homicide | Narcomenudeo | Business Robbery | Kidnapping |
|---|---------------------|---------------------|---------------------|--------------------|---------------------|
| -0.0071 (0.1947) | 0.1086+ (0.0572) | -1.564* (0.6721) | -4.2187 (3.4872) | 1.1549 (1.8708) | 0.1009+ (0.0581) |
| Significance levels: + $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. | | | | | |

Finally, the external validity of the RDDs presented here is unclear. However, these results suggestively indicate that when a mayor wins reelection, violence may decrease in places where criminal groups operate. In addition, the DiD shows that the possibility of being able to run for reelection can impact violence against politicians as well, reducing it overall. However, when criminal groups operate in places where parties compete, this can put politicians at an increased risk.

5 Conclusion

What is the effect of introducing reelection on how criminal groups and the state engage with each other? I argue that reelection can have perverse incentives – giving politicians who need electoral support, be it from lack of popularity or partisan competition, an incentive to collude with a criminal organization to win reelection. Once they are in office, groups and the state may try to use each other to expand their control on power and push out competitors. Therefore, while reelection may provide voters with an opportunity to hold politicians accountable, it can also reduce their ability to do so in some contexts. At the same time, however, the effects of this reform (generally) result in decreases in violence, creating a trade-off between criminal-political collusion with relative peace and democratic practices with violence.

This is an old question – one of a *pax mafiosa* – where stability comes at the cost of increasing the influence of armed, criminal groups in local politics. This question forces us to consider at what cost groups can continue to operate, and what the influences of that control continue to have on communities and daily lives. For policymakers, civil activists, and community members, this tradeoff may be a choice caught between a rock and a hard place, surrounded by bad options.

While the introduction of reelection is relatively specific to the Mexican system in modern politics, the underlying increase in value of an office that undergirds this theory is not. When an office gains responsibilities or power over decisions or policy-making, for example, we might expect similar results in places with sufficiently low costs of violence. Places that already experience high levels of violence from criminal groups, like El Salvador or Brazil, or have faced criminal violence against politicians in the past, like Russia, might be more vulnerable. Other places where criminal groups and political parties are closely linked, like Nepal, Pakistan, Haiti and Jamaica, may also be more likely to experience this type of phenomenon.

Snyder and Durán-Martínez (2009) argue, as do other scholars, that democratization destabilized the agreements between the state and criminal groups and the state could no longer credibly commit to working with the groups over long periods of time. In lieu of that commitment, criminal groups formed their own coercive institutions (Trejo and Ley 2018), which ignited a security dilemma and arms race between groups (Correa-Cabrera 2017). Further studies on this issue can explore how other institutional changes within the state – like term limits – impact the structure and organization of criminal entities.

Appendices

A. Electoral Procedures in Mexico

While nearly all states use at-large voting districts with plurality rule, many municipalities in Oaxaca (418 out of 570) use *Usos y Costumbres* procedures, as well as a few municipalities in other states. As a result, local politics function in a slightly different way in these municipalities than the in rest of the country, and will therefore be excluded from the sample of this study. In plurality-rule municipalities, city councils (*ayuntamientos*) are elected via ballots and mayors (*presidentes municipales*) are directly elected, while municipal councilors (*regidores* or *síndicos*) are elected via a proportional representation system.⁹

Usos y Costumbres (UyC) procedures were introduced in Oaxaca in the 1995 (Benton 2012). While nearly all other municipalities use a *sistema de partidos políticos* for local politics, these UyC procedures evolved out of traditional indigenous practices (*sistema normativos indígena*). They must follow the federal constitution and elect a mayor, municipal council, and attorney general, however, they can use alternative electoral strategies. Usually, the regimes are run by central-decision making bodies called *Asamblea General Comunal* (AGC), which is the highest political authority and manages all electoral processes, including candidate selection and voting practices. In some municipalities, the elders' council or community leaders take the place of the AGC. UyC regimes can determine who is eligible to engage in politics, "with the field most often restricted by sex, age, marital status, residency, and satisfactory participation in community service programs" (Benton 2012)[255]. This has led to criticism of anti-democratic processes. The UyC systems were codified into law as part of a PRI strategy to tighten their grip on control of a key state. Note that Oaxaca remained a party stronghold and authoritarian enclave until 2010. There are currently 417 of the 570 total municipalities which engage in these procedures (not including the disputed territory with Guerrero).

While reelection is permitted for mayors in Oaxaca, I do not think that UyC municipalities should be included in my study. There are two primary reasons for this. First, unlike other locales, mayors do not represent the highest local authorities in UyC municipalities. Rather, AGCs or elder councils have ultimate political sway. Given that criminal groups are trying to control municipal authority, it seems likely that mayors would be less attractive targets compared to other elements of authority. Second, and in a similar vein, these municipalities are not comparable to any others across the nation, as Oaxaca is the only state which uses UyC procedures. Different political and electoral systems require different

⁹The only small exception are municipalities in Nayarit, where all members of the municipal council are directly elected in single-member plurality districts, called *demarcaciones*.

studies to capture the nuances of local politics. Therefore, I propose that this be excluded from my study.

B. Data Collection Procedure

1. Sources

- For information on the outcome, data can be gathered from newspaper articles, mainly by hand and a small amount using Python to collect articles.
- For biographical information, can use campaign websites or newspaper articles about candidacy, or Facebook posts
- Key words for finding articles are “*alcalde*” or “*alcaldesa*” or “*edil*” or “*corregidor*” or “*presidente municipal*” (mayor), “*alcaldía*” (mayoral seat), “*candidato*” or “*candidata*” (candidate), “*ex candidato*” or “*ex candidata*” (former candidate), “*asesinado*” or “*asesinan*” or “*muerto*” or “*mató*” or “*hallan*” (killed), “*fallecimiento*” (death), “*atacó*” (attacked), “*tiró*” (shot), “*secuestrado*” (kidnapped), “*México*” (Mexico), as well as state-specific and/or municipality-specific names.
- Top websites for confirmation: *Mileno*, *Reforma*, *El Tiempo*, *Infobae*, *alcaldesdemexico*, *INEGI*, *Reuters*, *WRadio.com.mx*, *Telemundo*, *BBC*
- *Votar entre Balas* data for cross-referencing: using reports of attacks from 2018 to 2021. Matched identifying characteristics and attack information.
- ACLED data for cross-referencing: Filtered to Mexico, read through each observation and removed any that did not fit the coding criteria outlined in the paper. Then, cross-referenced newspaper articles with the data to increase internal validity.
- When there was a disconnect on the dates of an attack, but the other details remained the same, I recorded the earlier date for consistency. Usually, these dates were a day apart for an attack that occurred overnight, so the true date is unclear.

2. Process

- Every event was given a unique ID code.
- The day, month, and year of the attack were recorded.
- The type of attack, the perpetrator(s) and victim, their gender, profession, as well as victim’s party were recorded.
- The attack was geo-coded.
- The sources and their scope were recorded.

- A paragraph summary of the attack was written.
- The number of total fatalities was recorded.

C. Descriptive Statistics on Attacks by Party and Gender

How does partisan alignment vary with attacks by criminal groups? Table 4 shows the distribution of attacks by party of the victim. The first column shows the party and the second shows the total number of incumbents in each party in the dataset. The count and distribution of attacks are shown in the rest of the columns. Columns a-c show the total number of attacks (a), the number of attacks against incumbents (b), and the number of attacks against candidates (c). Finally, column five (d) shows the attacks against incumbents as a percentage of total incumbents, while column six (e) shows the percentage of attacks against candidates by party.

The vast majority of attacks – 84.5% of them – targeted challengers to the incumbent, while 15.5% of them attacked the incumbent themselves. While there are some outliers here due to the small number of incumbents from local parties, the general pattern is as expected. Generally, candidates were targeted at a higher rate than incumbents. This may be because there are simply more of them – in each municipality, there are often several challengers for each incumbent. The officeholder may also be able to use their power to use the police and other agents of the state for their own protection. Finally, incumbents may be the most likely to be captured first by criminal groups – as the actual seats of power, they can offer the most. To protect that investment, criminal groups may be more likely to attack their political rivals the incumbent.

Similar to previous research, leftist parties experienced higher rates of violence, as well as PAN, while the ruling PRI party experienced relatively lower. For example, MORENA experienced 43 attacks against mayoral candidates and incumbents during the period (6 incumbents and 37 candidates), PAN had 57 attacks (7 and 50, respectively). While the PRI had similar counts, they had a substantially larger pool of incumbents and candidates from whom they could draw.

Table 4: Attacks by Party

| Party | Total | (a) | (b) | (c) | (d) | (e) |
|----------------|-------|-----|-----|-----|-------|--------|
| ALIANZA | 271 | 8 | 1 | 7 | 0.37% | 2.58% |
| ALIANZA/MORENA | 4 | 2 | 1 | 1 | 25% | 25% |
| AVE | 54 | 2 | 2 | 0 | 3.7% | 0% |
| CMG | 12 | 6 | 1 | 5 | 8.33% | 41.67% |
| COAL. | 187 | 1 | 0 | 1 | 0% | 0.53% |
| CP | 48 | 1 | 0 | 1 | 0% | 2.08% |
| CPEM | 186 | 1 | 1 | 0 | 0.54% | 0% |
| CPG | 12 | 1 | 0 | 1 | 0% | 8.33% |

| | | | | | | |
|----------------------|------|----|---|----|-------|-------|
| CPP | 206 | 2 | 2 | 0 | 0.97% | 0% |
| CPU | 192 | 5 | 3 | 2 | 1.56% | 1.04% |
| CVPA | 118 | 7 | 2 | 5 | 1.69% | 4.24% |
| FM | 22 | 1 | 0 | 1 | 0% | 4.55% |
| INDEPENDIENTE | 104 | 1 | 0 | 1 | 0% | 0.96% |
| MC | 795 | 12 | 1 | 11 | 0.13% | 1.38% |
| MORENA | 1244 | 43 | 6 | 37 | 0.48% | 2.97% |
| MOVER | 50 | 2 | 0 | 2 | 0% | 4% |
| PAN | 3010 | 57 | 7 | 50 | 0.23% | 1.66% |
| PAN/MORENA | 8 | 1 | 0 | 1 | 0% | 12.5% |
| PAN/PNA | 180 | 1 | 0 | 1 | 0% | 0.56% |
| PAN/PRD | 140 | 4 | 0 | 4 | 0% | 2.86% |
| PAN/PRD/PT | 120 | 1 | 1 | 0 | 0.83% | 0% |
| PAN/PRD/PUDC | 2 | 1 | 0 | 1 | 0% | 50% |
| PAN/PRI/PRD | 94 | 3 | 0 | 3 | 0% | 3.19% |
| PBDNAY | 32 | 1 | 0 | 1 | 0% | 3.12% |
| PES | 129 | 2 | 0 | 2 | 0% | 1.55% |
| PMC | 36 | 1 | 0 | 1 | 0% | 2.78% |
| PRD | 1408 | 34 | 6 | 28 | 0.43% | 1.99% |
| PRD/PT | 161 | 15 | 0 | 15 | 0% | 9.32% |
| PRD/PT/CONVE | 58 | 1 | 0 | 1 | 0% | 1.72% |
| PRD/PT/MC | 104 | 1 | 1 | 0 | 0.96% | 0% |
| PRI | 3813 | 48 | 6 | 42 | 0.16% | 1.1% |
| PRI/PNA | 48 | 2 | 0 | 2 | 0% | 4.17% |
| PRI/PRD | 54 | 1 | 0 | 1 | 0% | 1.85% |
| PRI/PT/PVEM/PNA | 34 | 2 | 1 | 1 | 2.94% | 2.94% |
| PRI/PVEM | 1410 | 22 | 4 | 18 | 0.28% | 1.28% |
| PRI/PVEM/PNA | 572 | 5 | 1 | 4 | 0.17% | 0.7% |
| PRI/PVEM/PNA/PD | 64 | 1 | 1 | 0 | 1.56% | 0% |
| PRI/PVEM/ALIANZA | 275 | 10 | 1 | 9 | 0.36% | 3.27% |
| PRI/PVEM/PAN/ALIANZA | 38 | 1 | 0 | 1 | 0% | 2.63% |
| PRI/PVEM/PT/ALIANZA | 40 | 1 | 0 | 1 | 0% | 2.5% |
| PSDI | 40 | 1 | 0 | 1 | 0% | 2.5% |
| PSI | 55 | 1 | 1 | 0 | 1.82% | 0% |
| PT | 478 | 12 | 3 | 9 | 0.63% | 1.88% |
| PT/PVEM | 16 | 1 | 0 | 1 | 0% | 6.25% |

| | | | | | | |
|----------------|-----|----|---|---|-------|--------|
| PVEM | 865 | 11 | 2 | 9 | 0.23% | 1.04% |
| PVEM/PT/MORENA | 69 | 8 | 0 | 8 | 0% | 11.59% |
| SQR | 16 | 2 | 0 | 2 | 0% | 12.5% |

Other descriptive characteristics of the victims, such as gender, may be important to note as well. Of the 340 attacks, 34 of them targeted female incumbents or candidates. However, only 6 of those attacked were female incumbents at the time of their death. This is below the overall proportion of women in public offices in 2015 (9.4%) (López Méndez 2021), and well below their presence in 2021, which had soared to 23% of seats according to INEGI. This could indicate two things: one, that women are less likely to run in places where they are more likely to experience violence, or, two, that criminal groups are less likely to target them.

The first effect – that violence has a selection effect on who runs for office – has been examined in other contexts looking at the quality of the candidates (e.g., Pinotti 2012; Dal Bó, Dal Bó, and Di Tella 2006). However, it is also just as likely that this extends beyond the quality of individuals, and women may be impacted by concerns of violence differently than men (e.g., Krook and Sanín 2020; Bardall, Bjarnegård, and Piscopo 2020). The relatively infrequent targeting of female incumbents and candidates may be an indication that women decide previously not to enter politics, and thus not risk violence, having observed it nearby.

Furthermore, credible threats of violence may impact female candidates differently than male candidates. Barnes and Beaulieu (2019) find those female office holders may be more risk-averse, and thus less likely to take risky actions, like engaging in corrupt practices. It follows that they may be less willing to run at all if they may be in danger. Similarly, as women are often less able to access patronage networks classically dominated by men, they may be less able to connect to and work with a rival criminal group for support (Bauhr and Charron 2021). Thus, this descriptive evidence may give us some indication of the effects of this violence on shaping the candidate pool and determining who can engage in public politics.

The second effect, that groups could be choosing not to target women, may be less likely to be prevalent. First, criminal groups engage in widespread violence against women across the country (Sandin 2020). Mexico has one of the highest rates of violence against women, including femicides, in the Americas. Previous studies on gendered violence against women, particularly those who enter spheres traditionally dominated by men, argue that women are more likely to attract violence in reaction to their entry (Bardall, Bjarnegård, and Piscopo 2020). If this effect held for violence against female officeholders from organized criminal groups, we would expect violence to be *higher* against women, not lower. Therefore, while

criminal groups engage in widespread gendered violence, the selection effect seems more likely in this specific context. However, the interaction of gender, politics and organized crime remains understudied.

D. Alternative Measure of Criminal Presence

Poppy fields are an imperfect proxy of criminal presence. Therefore, I also estimated these effects using the aforementioned measure by Coscia and Rios (2012). This measure is appropriate for the pre-treatment requirement. However, it is also not likely to be able to tell us much about modern criminal behavior. The municipalities that had criminal groups in them in 2010 may no longer have groups operating there, as business models, criminal and criminal-state group relationships, and the groups themselves have dramatically changed. The broader nature and structure of criminal groups in Mexico have evolved dramatically over the past decade (Jones et al. 2022). The results are shown in Table 5. In this estimate, the effects are similar to the estimates produced by poppy proxies but far noisier.

Table 5: Treatment Effect on Attacks (Cartels and Party Alternation (2012) Subset)

| | Baseline | Partisan Alternation | Cartels | Partian Alt. & Cartels |
|---------------------|--------------------|----------------------|-------------------|------------------------|
| Staggered Treatment | −0.018+ (0.011) | 0.013 (0.009) | −0.011 (0.022) | 0.011 (0.045) |
| Num.Obs. | 7153 | 2175 | 2350 | 474 |
| R2 | 0.049 | 0.057 | 0.086 | 0.180 |

Significance levels: + $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

E. Spillovers

Tobler (1970) canonically claimed that the first law of geography is that everything is related to everything else, but near things are more related than distant things. In this context, it is highly likely that the actions of a criminal group in one municipality may influence their behavior or the behavior of other groups in nearby areas. In this section, I will examine the robustness of the main findings in light of this principle and the inherent local-ness of criminal organizations using a model which identifies both total and indirect (spillover) treatment effects (e.g., Dubé et al. 2014; Ichino and Schündeln 2012; Butts 2021).

There are several reasons to think that spillovers are a likely issue. When criminal violence is employed to remove politicians, this reduces the cost for the criminal group of conducting such violence. As groups around them carry out the violence with impunity, candidate cleansing becomes a more attractive regional strategy. While criminal groups have a hierarchical structure, local clans or groups often act with autonomy to address local matters, and would be able to decide how to engage with politics on their own (Correa-Cabrera 2017; Hernández 2013). This may incentivize them to weaken nearby rivals by removing their political protection, opening an opportunity to move into their territory (Osorio 2015). Alternatively, this violence may displace groups into new territories as a rival becomes increasingly dominant (Dell 2015).

This violence would likely have a spillover effect within the areas the violent groups operate on the behavior of politicians and candidates as well. For candidates, it may send a message to other challengers in nearby municipalities, influencing who chooses to run, with whom they align, and the actions they may take. As the risk of violence increases, the quality of candidates who are willing to run – those who may be more educated, less corrupt, or otherwise a “good type” – may decrease (Dal Bó, Dal Bó, and Di Tella 2006). This leads to worse and worse candidates entering the political sphere in surrounding areas, as well as in the municipality which directly experienced violence. We may expect this spillover to be more prominent within areas controlled by groups that are committing violence.

Recent scholarship has expanded our understanding of how to causally address the issue of spatial correlation between units (Delgado and Florax 2015; Butts 2021; Reich et al. 2021; Men 2022). This occurs when the outcome of a unit depends on their own treatment assignment as well as that of their neighbors. Without any assessment of the issue, this interference is a clear violation of the Stable Unit Treatment Value Assumption (SUTVA) and causes heteroscedasticity within error terms. This can spatial autocorrelation be formally expressed as

$$\text{Cov}[y_i, y_j] = E[y_i y_j] - E[y_i] \cdot E[y_j] \neq 0, \quad \text{for } i \neq j$$

Here, I will present evidence of this correlation between units, using an approach borrowed from geographic studies. Moran's I statistic is the correlation coefficient for the relationship between the lagged outcome and its surrounding neighbors. It allows us to quantify the degree to which the outcomes in areas are clustered. The use of Moran's I in this context is justified in this context, as the expected parameter is close to 0, avoiding some concerns of bias, as discussed by Li, Calder, and Cressie (2007).

To calculate this, we must first define what a nearby area is. I define a neighboring municipality as any with touching boundaries. Each municipality has its own clump of neighbors, and the average number of attacks in that clump is calculated. A visualization of this relationship for each municipality and its respective cluster is shown in Figure 7. If there was no correlation between the number of attacks and the surrounding ones, the correlation between the two variables would be flat. The exact estimates for all outcomes are shown in Table 6, calculated using a spatial lag model, following Zachary and Spaniel (2020) and Men (2022). Significance is estimated through Monte Carlo simulation. This estimate indicates that attacks are significantly clustered, and places which experience an attack in a contiguous neighboring municipality are more likely to experience an attack as well. Note, however, this is purely descriptive, rather than causal, as Kelejian (2008) discusses.

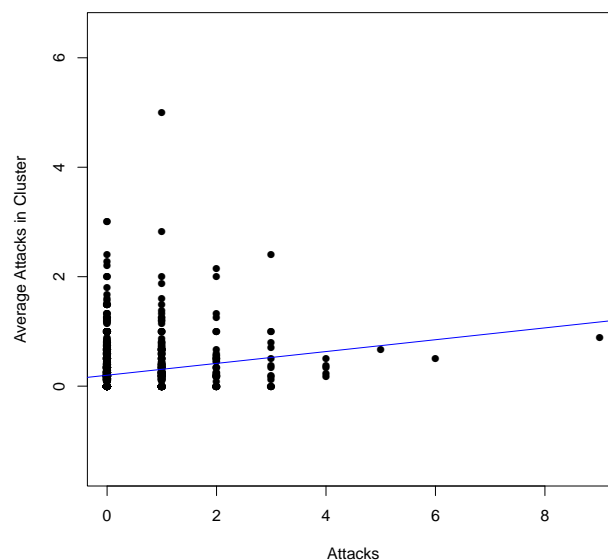


Figure 7: Scatterplot of Average Attacks in Cluster and Average Outcomes

Table 6: Moran's I Estimates

| | Moran's I Statistic | Expectation |
|---------|------------------------|-------------|
| Attacks | 0.1081*** (0.0003) | -0.0005 |

+ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

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