

# Social Dissent, Coercive Capacity, and Redistribution: Evidence from Authoritarian Mexico\*

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Why and where do authoritarian regimes follow coercive versus redistributive strategies to manage social dissent across the territory they govern? We argue that the incidence of different authoritarian tactics to deal with dissent depends on the coercive capacity of the state, which autocrats often inherit from the past. Where autocrats facing increasing discontent can rely on their capacity to coerce regime dissidents, they are more likely to eschew redistributive strategies. In contrast, dissent increases the likelihood of redistribution where autocrats lack readily-available tools for coercion. We provide empirical support for this argument primarily using a difference-in-differences identification strategy that exploits three sources of variation. First, we use a land reform that between 1910 and 1992 redistributed more than 50% of Mexico's agricultural land. Second, we exploit a wave of dissent around the 1960s. Finally, we use municipal data on the availability of loyal semi-formal militias to coerce dissidents. Our results indicate that, when confronted with dissent, the PRI regime redistributed relatively less land in municipalities with more rural militia presence. We also show that, in those municipalities, events expressing social discontent were more successfully deterred. The study sheds light on how state coercive capacity shapes authoritarian strategies.

**Keywords:** Social dissent, state coercive capacity, and land allocation  
**JEL:** D72, D73

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# 1 Introduction

Why do authoritarian governments respond to social dissent with redistributive policies or, alternatively, engage in coercive strategies? The *de facto* lack of accountability institutions to prevent arbitrary deployment of the state's coercive power is a defining feature of autocracies (Davenport 2007b; North, Wallis, and Weingast 2009; Weingast 1997). However, autocrats possess many strategies to manage societal dissent, in part also due to institutional differences associated to the regime type (Gandhi 2008; Magaloni 2006; Svolik 2012), which condition the need for coercion (Davenport 2007c; Frantz and Kendall-Taylor 2014; Rivera 2017). Similarly, in contrast with the predictions of many political economy models that predict greater redistribution under democracy than under autocracy (Acemoglu and Robinson 2006; Boix 2003), autocracies appear to redistribute at least as much as democracies (Slater, Smith, and Nair 2014; Timmons 2010). In particular, Albertus (2017) shows that land redistribution—historically, economic elites' deepest fear and thus a major roadblock to democratization (Ziblatt 2008)—has been more common under authoritarianism.

We advance our limited knowledge regarding when authoritarian governments would favor redistributive policies to coercive strategies by arguing that variation in state coercive capacity is a critical determinant of the choice of authoritarian survival strategies. Coercive state capacity (i.e., the capacity to monitor the population, detect dissent, and coerce and repress dissidents) shapes whether autocrats find it viable to manage social dissent without responding to the redistributive demands of the population. Importantly, we emphasize that autocrats are not able to freely adjust such capacity to deal with social dissent, and even less so in the short run. Social mobilization often suddenly triggers, spread, and reach regime-threatening proportions (Kuran 1989). As a result, autocratic governments might have to resort to redistributive policies, such as agrarian reform, to appease dissent, even at the added cost of antagonizing some elites (Albertus et al. 2016; Albertus 2017).

We dig into previously-untapped primary sources and exploit subnational and temporal variation from authoritarian Mexico to provide qualitative and quantitative

evidence consistent with this logic. By exploiting subnational variation within a single country, we hold constant national-level variables that have received the most attention (e.g., authoritarian-regime, national economy). Specifically, we analyze the ruling Institutional Revolutionary Party (PRI)'s differentiated territorial response to a strong, sudden wave of unrest that challenged its power around the 1960s. At this time, confronted by rising mobilization from below, the PRI revamped its land redistribution program and repressed worker, student, and peasant movements ([Albertus et al. 2016](#); [Herrera Calderón and Cedillo 2012](#)).

Our difference-in-differences design analyzes whether when faced with such challenge, the regime engaged in relatively less redistribution in municipalities where it had greater coercive capacity. To that end, we exploit unusually fine-grained variation in redistribution and state coercive capacity. We proxy for redistribution using municipal-level data on a land reform program that redistributed more than 50% of Mexico's agricultural land between 1910 and 1992 ([Torres-Mazuera 2009](#); [Sanderson 1984](#)). Land was allocated in the form of ejidos not to individuals but to communities, which jointly held the property right over it. To measure state coercive capacity, we use data on municipal presence of semi-formal rural militias during the formative period of the postrevolutionary Mexican state ([Sánchez-Talanquer 2018](#)). These militias were mobilized during state-building in the 1920s and 1930s to defend the emerging regime from counterrevolutionary threats and constituted the largest and farthest-reaching coercive network in Mexico's exceptionally-durable authoritarian regime.

Our central finding is that, when confronted with mass social discontent around the 1960s, the PRI redistributed relatively less land in the form of ejidos in municipalities with a higher presence of rural militias inherited from the revolutionary state-building era. We show that these results are not driven by differential trends across municipalities with a varying presence of rural militias prior to the mid 1960s. We also rule out the main alternative mechanisms including state trends, omitted municipal factors that correlate with rural militia presence, mean reversion and ceiling effects, and higher resistance of landed elites in municipalities with more rural militias.

We complement these quantitative results with primary evidence that suggest extensive involvement of the rural militias on tasks of surveillance, social control, and repression of popular agrarian demands in the Mexican countryside. Consistent with these qualitative data showing reliance on the coercive state capacity of the rural militias to deter social dissent, we also show a strong negative association between the municipal presence or rural militias and events of social and political discontent in the 1960s ([Fergusson, Larreguy, and Riaño 2018](#)). Our results thus support our theoretical emphasis on state coercive capacity to understand the prevalence of coercion and redistribution in autocracies.

Our argument and results highlight how state capabilities often bequeathed from the past shape authoritarian survival strategies. As armed semi-formal extensions of the state in the countryside, rural militias served to placate expressions of dissent and coercively suppress popular demands, while lessening the need of land redistribution to manage social discontent. Rural militias then mutated from being popular tools of the revolution into being authoritarian-regime tools for the repression of the enduring rural demands. Our study points to the importance of factoring in the capacity of state, which varies significantly over its territory as a result of historical processes of state formation, as a crucial determinant of leaders' responses to social dissent in authoritarian settings.

The paper is closely related to literature on the links between contentious politics, authoritarianism, and state capacity ([Bellin 2004](#); [Levitsky and Way 2010](#); [Slater 2010](#)). In contrast to Slater, who explains cross-national variation in the strength of authoritarian Leviathans as a function of revolutionary popular mobilization, we highlight how state capabilities inherited from the past can shape autocrats' choices as they respond to crises of social unrest, even within the territory they govern. Our emphasis on inherited state capacity as a constraint on governments in times of emergency contributes to the literature that emphasizes the importance of analytically separating states from the regimes they undergird ([Huntington 1968](#)), as well as with analyses of state-building as a historical process subject to long-term forces and institutional path-dependence ([Soifer 2015](#); [Centeno 2002](#)).

## 2 Theoretical Framework

### 2.1 Coercive Capacity and Redistribution in Autocracies

There is the consensus among students of state violence that coercive strategies intended to increase the cost of political resistance (Davenport 2007a; Tilly 1978) increase when authoritarian governments face political and social dissent than threatens their hold on power. A review of the literature refers to the link between dissent and coercion as the “Law of Coercive Responsiveness” (Davenport 2007a, 7). Research has examined how factors like the type and timing of dissent (Carey 2010; Tarrow 2015), sequential strategic interaction between rulers and dissidents (Moore 2000; Pierskalla 2010; Ritter 2014), or revenue source (DeMeritt and Young 2013) affect the extent of coercion.

However, coercion is only one among several options authoritarian regimes have to manage surging dissent. Political reforms short of full liberalization, cooptation of (potential) dissenters, and partial accommodation of dissident demands are also part of their toolkit to contain unrest (Gandhi 2008; Magaloni 2006; Svolik 2012). Concessions to specific popular sectors demanding redistributive policies rank high among the strategies followed by autocrats to buy social quiescence. We focus on land reform as a frequent form of redistribution in authoritarian regimes (Albertus 2017) and one of particular relevance to our case (Sanderson 1984).

Yet, what determines the optimal combination of coercion and redistribution that autocrats employ to maintain regime stability? The answer to this question cannot be reduced to national-level factors like authoritarian-regime type, national economic conditions, or the idiosyncratic preferences of the governing elites since we often observe the same authoritarian regime pushing one strategy more aggressively than the other in a given area of the territory it rules, just to simultaneously follow the opposite strategy elsewhere. This means that accounting for variation in the use of authoritarian control tactics requires attention to other factors that vary subnationally.

Some authors argue that different types of dissent are met with different government reactions (Finkel 2015; Moore 1998). We, in turn, shift the attention from variation in the

form of dissent to variation in the coercive capacity of the state. Specifically, we point to the uneven territorial reach of state coercive institutions as a key determinant of the prevalence of redistribution and coercion. In highlighting this as an independent explanatory factor, we build on and advance a well-established tradition of state-centered analysis in the social sciences (Mann 2012; Migdal 1988), which contrasts with purely class-based explanations of redistributive outcomes (Slater, Smith, and Nair 2014).

Focusing on the capacity of the state to routinely organize (the threat of) coercion across the national territory has straightforward but relevant implications for the prevalence of different authoritarian survival strategies. There are two main implications of our theoretical argument. First, where autocrats can rely on greater installed capacity to monitor and coerce, there should be a lower incidence of events that express dissent, due to more successful deterrence—“preventive repression” (Ritter and Conrad 2016)—or repression that prevents escalation of social discontent. Second, greater coercive capacity should reduce the need to incur in the costs of implementing redistributive policies to appease dissent—including among them, confronting economic elites—and hence the relative incidence of redistribution. Conversely, where coercive capacity to face social dissent is limited, there should be both more expressions of social dissent and greater redistribution.

Our argument builds on the insight that identifying and monitoring dissidents, dissuading them from inciting unrest, and when the need arises, exercising repression, which has been denoted as the “coercion problem,” poses organizational and logistical challenges of considerable proportions (Policzer 2009). Overt, indiscriminate repression sends a powerful message, but it is also entails high international and domestic costs in terms of legitimacy and may backfire. Routine, less visible and moderate coercion of the type that constantly and insidiously imposes barriers to the expression and coordination of dissent is crucial to sustaining authoritarian rule (Levitsky and Way 2010). However, this type of coercion requires broad state presence and integrated networks through which information and orders can flow, of the kind that autocrats cannot establish overnight (Greitens 2016). Coercive state capacity across the territory

cannot then be taken for granted, and often exhibits significant variation that reflects historical processes of state formation.

Importantly, while autocratic leaders anticipating societal opposition can make investments in coercive state capacity, state-building takes time and resources. As a result, autocrats' ability to coerce sudden, widespread social dissent is often restricted by the coercive state capacity inherited from the past, which pushes them to rely on other strategies to placate dissent. Precisely because state capacity is weaker and exhibits more variation away from urban centers, our theoretical argument is then mainly applicable to rural areas. Yet, control of the countryside and the peasantry has been historically at the center of authoritarian regime stability in predominantly agrarian societies throughout the world (Skocpol 1979). Moreover, it is in these peripheral areas where dissidents often hide from the state (Fearon and Laitin 2003), and thus where the challenge of organizing coercion is particularly acute.

### **3 Historical Background**

#### **3.1 Rural Militias, Social Dissent, and Agrarian Reform in Authoritarian Mexico**

Twentieth-century Mexico is an ideal context to test our theoretical argument about the importance of coercive state institutions to understand the interplay between coercive and redistributive tactics under authoritarianism. From the 1920s to the 1940s, the regime born from the Mexican Revolution (1910-1917) (re)built and consolidated state and party institutions that upheld one of the world's longest authoritarian regimes (Magaloni 2006). Only in 2000 would the official party—restructured as the current PRI in 1946, marking the end of the constructive period of the Revolution—be defeated for the first time in a presidential election (Greene 2007).

Our empirical strategy examines how the coercive apparatus that emerged from the period of postrevolutionary statebuilding (roughly from the 1920s to the mid-1940s) conditioned the response of authoritarian governments to widespread dissent starting in the late 1950s and prolonging well into the 1970s, particularly their propensity to



distribute land in the form of *ejidos* for political stability. Next, we describe the historical setting, along with qualitative information that supports the coercive role of rural militias in deterring and repressing rural dissent.

### 3.1.1 Agrarian Reform and Militia Mobilization during State-Building

Following the armed phase of the Mexican Revolution, the new governing elite adopted an ambitious program of land reform to pacify the country and redress peasant grievances that had been at the root of the conflict (Knight 1986; Sanderson 1984). Land was distributed to peasant communities in the form of *ejidos* where property rights over the land were communal. As a result, land could not be sold, rented, or used as collateral for credit. Community members only enjoyed inheritable use rights over specific plots. Communities could petition land, but they had to go through a cumbersome bureaucratic process in which political considerations weighed heavily (Albertus et al. 2016).

Less studied has been the fact that, along with land, the regime broadly distributed arms to the peasantry, for them to serve as “the vanguard of the legion” defending the Revolution (Secretaría de Guerra y Marina 1929, 4) and provide for their own protection, given the weakness of state institutions in the wake of the Mexican Revolution.<sup>1</sup> Collaboration of irregular peasant militias was critical to regime survival during the state-building period. At various points, factionalism within the army (Lieuwen 1968; Plasencia 2010), as well as counterrevolutionary contention from landlords and political Catholics (Bailey 1974), put the new revolutionary regime on the brink of collapse. Sánchez-Talanquer (2018) shows that the deep religious cleavage that led to the Catholic Cristero Rebellion (1926-1929) shaped the geography of peasant militia mobilization that emerged from the state-building period.

Recognizing that the support from rural militias was inescapable to maintain control over the territory, the regime granted them semi-formal status.<sup>2</sup> In the wake of the

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1. In addition to state-mobilized militias, many small groups that traced their roots to the period of fighting remained armed and, throughout the 1920s and 1930s, also started to collaborate with the new regime in exchange for land grants.

2. The military warned against the risks of maintaining large irregular forces, but state-building elites settled for semi-formal incorporation given the circumstances (Staniland 2015).



bloody Cristero Rebellion (1926-1929), the army issued regulations defining the rural defenses, or *defensas rurales*, as community-based, part-time, and unsalaried militias formed by peasants who supported the ideals of the Revolution ([Secretaría de Guerra y Marina 1929](#)). They were formally put under the command of the army, but remained embedded in local communities and outside the state apparatus proper.

Militia mobilization reached unprecedented proportions during Lázaro Cárdenas' presidency (1934-1940), when land redistribution and the associated landlord resistance also peaked. Cárdenas saw the arming of the peasantry as a key step in the forming of a citizenry that shared the values of the Revolution ([Rath 2013](#)), which would also protect the government from a coup by the more conservative segments of the army that confronted it. Land redistribution, militia mobilization, and corporatist incorporation of the peasantry into the party-state through the corporatist National Peasant Confederation (CNC) went hand in hand during this revolutionary state-building stage.

Many efforts were taken to ensure the loyalty of the rural militias to the regime and their sustained presence in the Mexican countryside. Membership into the rural defense forces was formally restricted to land reform beneficiaries, which automatically created a link of dependency on the central state. Because the agrarian reform program granted property rights over the land not to individuals but to communities, it effectively restricted access to inputs, markets, and credit via the state corporatist organizations, which allowed the central government to exert an important degree of control over land reform beneficiaries ([Albertus et al. 2016](#); [de Janvry, Gonzalez-Navarro, and Sadoulet 2014](#)), and consequently over militia members. Since the land reform limited inheritance of land use rights to a single family member and these rights could not be sold ([de Janvry, Gordillo, and Sadoulet 1997](#)), it also turned militia membership into an intergenerational family institution. These measures were decisive in harnessing rural militias to the state and enabling their use as socially-embedded instruments of authoritarian coercion later on.

By 1946, when the reorganization of the official party as the modern PRI signals the completion of the process of institutionalizing the Revolution, a network comprising

thousands of part-time peasant militias spread throughout the vast Mexican countryside, as the coercive face of the party-state in local communities. Records of the US Military Intelligence Division report some 70,000 militia members by 1940, outnumbering regular troops at 58,000.<sup>3</sup> With the outbreak of the Second World War, the regular army focused more explicitly on potential external threats and relied heavily on rural militias for policing the countryside. A 1944 report to the Secretary of Defense and the president described the militias, “initially lacking serious organization and tied together only by camaraderie and mutual sympathies,” as critical “for maintaining public order across the country.”<sup>4</sup>

### **3.1.2 Targeted redistribution and the repressive uses of rural militias in the 1960s and 1970s**

Starting in the late 1950s, a number of worker, student and peasant movements began to challenge the PRI’s hegemony. Industrial workers and teachers mobilized against the incorporation of their unions into the corporatist government and the cooptation of leaders (Herrera Calderón and Cedillo 2012). They demanded union democracy and autonomy from the state, as well as better pay and working conditions. The government often repressed and incarcerated protesters. Student political activism, already visible in the late 1950s, spread throughout universities all over the country. They demanded intellectual freedom and academic reforms for a better-quality and a broad-reaching higher education. Student protest were similarly repressed by the government, with the famously known Massacre of Tlatelolco in 1968, at which hundreds of students were murdered, as a highlight.

Dissent against the regime also sprawled in the countryside. Independent peasant organizations began to challenge the National Peasant Confederation (CNC), the corporatist peasant confederation affiliated with the party-state.<sup>5</sup> The emergence of these

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3. Report No. 8679, October 7, 1938, “Quasi-Military Organizations. Reserves in various Military Zones.” Records of the War Department General and Special Staffs (RG 165), Military Intelligence Division, Security Classified Correspondence and Reports, 1917-1941 (Entry A1-65), box 686, file number 2025-259/671.

4. Comandancia del 8° Cuerpo de Infantería al C. Secretario de la Defensa Nacional, AGN, Ávila Camacho, 550/24.

5. Among these were the Unión General de Obreros y Campesinos de México (UGOCM), the Movimiento de Liberación Nacional (MLN), and the Central Campesina Independiente (CCI).

peasant movements reflected the regime's abandonment of revolutionary goals of agrarian transformation, which opened political space for new movements that mobilized old and new grievances produced by "agrarian counter-reform" in the 1950s (Bartra 1985, 66-78).

Peasant protests were also met with repression and the incarceration or in some instances the murdering of leaders. Noticeably, in 1962, the leader of the peasant movement in the traditionally revolutionary state of Morelos and former candidate to the governorship, Rubén Jaramillo, was brutally assassinated by the army. A careful study of Jaramillo's movement concludes that repressive and clientelistic strategies later employed to deal with widespread unrest were first tried in the countryside (McCormick 2016).

Authoritarian elites thus faced rising anti-regime mobilization from below since the late 1950s until well into the 1970s on various fronts. Part of the government response included a revival of land reform, whose timing and distribution the PRI deliberately manipulated to contain losses in electoral support (Gordillo 1988; Albertus et al. 2016). Using state-level data, Albertus et al. (2016) also suggest that the PRI targeted land redistribution to areas of latent social unrest since it was an attractive strategy to undercut instability while avoiding the use of force. Although we also emphasize the strategic political use of land redistribution, we stress the importance of incorporating the reach of the coercive apparatus inherited from the earlier postrevolutionary period to understand the relative prevalence of autocrats' use of redistribution and repression to contain dissent in the 1960s and 1970s.

An important part of the regime's response to widespread social dissent was to leverage the vast network of rural militias to support its internal security functions. Estimates of their numbers in the early 1970s oscillate from 80,000 (Basáñez 1981, 78) to 120,000 (Lozoya 1976, 112), well above the reported size of the army (65,000). In 1964, the military provided the militias an explicit counterinsurgency mandate (Secretaría de la Defensa Nacional 1964). Rural militias were at this point tasked with acting as "guides, explorers, and couriers in the persecution, capture, and detention of disturbers of order

and public safety,” as well being “organs of information at the disposal of [Army] Territorial Commanders,” among other basic policing functions. In our empirical analysis, we then use 1965 as a breakpoint on when the militias acquired a renewed coercive role to combat surging rural discontent.

Several archival documents and government publications suggest the rural militia apparatus, which originally served to defend the Revolution, was redeployed by Mexico’s authoritarian regime in the 1960s and 1970s to deter and repress social dissent. Numerous accounts indicate that independent peasant organizations pressuring for land complained about the direct coercion received from the rural militias.<sup>6</sup> The reports of the Truth Commission of the southern state of Guerrero, where the “Dirty War” against leftist guerrillas peaked in the early 1970s and landed elites remained powerful, contain multiple incidents citing the participation of rural militias in the repression and persecution of state targets, including forced disappearances and extrajudicial killings (Comisión de la Verdad del Estado de Guerrero 2014; Sierra Guzmán 2003).

Army documents and military operation reports also highlight the indirect coercive role that rural militias played to manage social dissent. The military, for instance, often appear acting on intelligence provided by rural militias to repress dissidents, from the late 1960s to the 1970s.<sup>7</sup> Rigorous empirical studies at the municipality level show that the wave of disappearances, in which the participation of the rural militias has been documented, are associated with increased bureaucratization and state presence in contemporary Mexico, but also higher homicide rates and more criminal organizations. (Osorio, Schubiger, and Weintraub 2018).

## 4 Empirical Strategy

The main empirical implication of our theoretical argument is that, if authoritarian regimes are confronted with social dissent, whether they use repressive or redistributive strategies to appease it depends on their coercive capacity. To test this hypothesis, our

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6. Communications of the Central Campesina Independiente to the Commander of the XXI Military Zone and the Secretary of National Defense. AGN, Estado Mayor de la Defensa Nacional, box 84, file numbers 613, 1185.

7. AGN, Estado Mayor de la Defensa Nacional, box 231, file number 373.

identification strategy exploits a national shock that threatened the PRI's hegemony around the 1960s and variation in rural militia presence across Mexican municipalities. Specifically, we conduct a difference-in-differences analysis where we assess whether, once its power was contested circa the 1960s, the PRI redistributed relatively less land in the form of ejidos in municipalities where there were more rural militias.

Formally, our baseline specification reads as follows:

$$\log(\text{Redistribution}_{m,t}) = \alpha_m + \delta_t + \gamma \cdot (\text{Post } 1965_t \times \text{Militias}_m) + \varepsilon_{m,t}, \quad (1)$$

where  $\log(\text{Redistribution}_{m,t})$  is one of the following three measures capturing the extent of land redistribution: the number of *ejidos* granted, the number of beneficiaries of such grants, and the area granted (in square kilometers) in municipality  $m$  in year  $t$ .  $\text{Post } 1965_t$  is an indicator that the year  $t$  is subsequent to 1965, whereas  $\text{Militias}_m$  corresponds to the municipal number of rural militias present in municipality  $m$  between 1932 and 1946 per 100,000 inhabitants in 1930. Finally,  $\alpha_m$  and  $\delta_t$  represents municipality and year fixed effects. We cluster standard errors at the municipality level, i.e., the level of our identifying variation. Our theoretical argument predicts that  $\gamma$  should be significantly negative.

The choice of 1965 as a breakpoint so to define  $\text{Post } 1965_t$  is *a priori* not obvious. As mentioned in Section 3.1, the social and political contestation of the PRI started in late 1950s and lasted well into the early 1970s. However, as also mentioned in Section 3.1, the rural militias were provide an explicit counterinsurgency mandate as of 1965. As a result, we choose 1965 as the breakpoint when both the PRI's hegemony was challenged and the rural militias acquired a renewed coercive role to combat the rising rural discontent. Nonetheless, our baseline results are robust to choosing 1960 and subsequent years as breakpoints instead.

Our identification assumption requires that municipalities with varying presence of rural militias exhibit parallel trends in land redistribution before 1965. We test this assumption by running the following specification assessing treatment effects on land

allocation by quinquennia relative to the 1961-1965 quinquennium:

$$\begin{aligned} \log(\text{Redistribution}_{m,t}) = & \sum_{q=1940}^{1960} \beta_q \cdot \mathbb{1}(\text{Quinquennium} = q) \times \text{Militias}_m \\ & + \sum_{q=1970}^{1990} \gamma_q \cdot \mathbb{1}(\text{Quinquennium} = q) \times \text{Militias}_m \\ & + \alpha_m + \delta_q + \varepsilon_{m,t} \end{aligned} \quad (2)$$

For the identification strategy to hold, the coefficients in the pre-period (i.e, all the  $\beta_q$ 's) should be small and statistically insignificant.

Our theoretical argument additionally implies that the coercive capacity of the state is closely related to the levels of social dissent. We explore this relationship running the following specification:

$$\log(\text{Protests}_m) = \alpha_s + \phi \cdot (\text{Militias}_m) + \varepsilon_m, \quad (3)$$

where  $\text{Protests}_m$  is the number of events reflecting political and social discontent (per 100,000 inhabitants in 1930) between 1960 and 1969 and  $\alpha_s$  state fixed effects. We analyze the following seven overlapping categories of protests: Any kind of protest, strikes, complaints and grievances, students and teachers related, unions related, public services related and demonstrations that unrelated to agricultural issues. Our theoretical argument predicts that all the  $\phi$ 's should be significantly negative.

## 5 Data

Our empirical analysis combines multiple data sources. Data on land redistribution in the form of *ejidos* is drawn from the Cadaster and History of Agrarian Nuclei (PHINA) of the National Agrarian Registry (RAN), and includes the allocation date, the number of beneficiaries, and area allocated.<sup>8</sup> Figure 1 depicts the frequency of allocation of *ejidos* over time. In addition to the well-known peak in *ejido* allocation that occurred during the Lázaro Cárdenas administration (1934-40), there was intense land redistribution

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8. The data was scraped from <http://phina.ran.gob.mx/phina2/> by Melissa Dell, who generously shared it with us.

throughout the century, with close to 1,000 *ejidos* granted in every quinquennium.

We compute the municipal presence of rural militias aggregating the locality-level database on the presence of these units from 1932 to 1946, which was developed by [Sánchez-Talanquer \(2018\)](#) using records from the National Archives of Mexico (AGN). We standardize this measure of municipal rural militia presence using the 1930 municipal population, which we compute using the National Institute of Statistics and Geography (INEGI)'s historical catalog of localities.<sup>9</sup> Figure 2 presents the distribution of the rural militias per 100,000 inhabitants across Mexican municipalities.

We also use INEGI's various databases to construct municipal-level controls. From the historical catalog of localities, we additionally compute the 1930 municipal number of *ranchos* and *haciendas*. INEGI also provides information on the municipal average temperature, rain, and altitude, as well as on the municipality area. Lastly, we construct the stock of granted *ejidos* and agricultural land available for redistribution combining data from PHINA and the 2007 Agricultural Census by INEGI.<sup>10</sup>

We borrow municipal-level measures of social and political discontent during the 1960s from [Fergusson, Larreguy, and Riaño \(2018\)](#), who collected information on social and political protests from two Mexican newspapers of national coverage—*Excelsior* and *El Universal*. They coded all news stories on demonstrations, marches, protests, strikes, and riots from the universe of articles published between 1960 and 1969, which we use to compute the number of these events per 100,000 inhabitants in 1930 at the municipality level. Figure 3 shows the distribution of this variable across municipalities in Mexico.<sup>11</sup>

Table 1 shows summary statistics for all the variables used in our empirical analyses. There is significant variation in our main variables. For the three dependent variables—the number of *ejidos* granted, the number of beneficiaries of such land grants and the area of land granted in a given municipality in a given year—the ratio of the standard deviation to the sample mean is around five. During the period of analysis, the municipal number of beneficiaries in a given year varies from 0 to 304,000 individuals,

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9. We accessed the historical catalog from <http://www.inegi.org.mx/geo/contenidos/geoestadistica>

10. We accessed the census from <http://en.www.inegi.org.mx/proyectos/agro/agricola/2007/>

11. Appendix B presents additional details on the construction of this variable; while Figure B1 shows its distribution overtime.



the number of *ejidos* from 0 to 310 land grants, and the area from 0 to 23.08 square kilometers. On average, we observe 14 militia groups and 19 events of social and political discontent per 100,000 inhabitants in 1930. However, these figures do not imply that the phenomena are not widespread since there is a remarkable variation across municipalities. Municipalities exhibit between 0 and 2,272 events of social and political discontent, and between 0 and 520 militias per 100,000 inhabitants.

## 6 Results

### 6.1 Protests and Rural militias

We begin by exploring the relationship between the presence of rural militias and the events of social discontent during the 1960s. We expect that places where the PRI inherited more militias, these events were less frequent given that the greater repressive capacity of the authoritarian regime in those places deterred or mitigated the escalation of expressions of social dissent. By first comparing Figure 2 and Figure 3 that illustrate the distribution of these variables across Mexican municipalities, as predicted by our theoretical argument, we can graphically appreciate a negative correlation between them. Moreover, Table 2 presents the results of the specification presented in equation (3), which confirm a robust negative association between these two phenomena regardless of the type of event of social discontent. Notice that this negative association holds also for events unrelated to agricultural matters, which indicates that the presence of rural militias did not only deterred or mitigated rural protests including demands for land redistribution. In terms of magnitude, a one standard deviation increase in the (log) number of militias is associated with a 224% drop relative to the mean log(number) of events of social dissent, which is a treatment effect fairly consistent across the different types of events of social discontent.

## 6.2 Baseline results

Table 3 presents the results of our main specification introduced in equation (1). It has three columns, one for each of our dependent variables: the number of ejidos in column (1), the area redistributed in column (2), and the beneficiaries of those ejidos in column (3). We follow this structure consistently in the tables that follow. Across all outcomes, we find that the interaction term between rural militia presence and the Post-1965 indicator— $\gamma$  in equation (1)—is negative and statistically different from zero. This confirms the main empirical prediction of our theoretical argument that, after 1965, areas with more rural militias experienced relatively less land redistribution in the form of *ejidos*. The effects are non-negligible in size and fairly consistent across our three measures of land redistribution. A one-standard-deviation increase in the rural militia presence leads to an approximately 0.008 percentage point (pp) decrease in the number of ejidos after 1965, which is about 12% of the sample average. The coefficients for the area and beneficiaries imply a similar effect, with a one-standard-deviation increase translating into an approximately 0.04 pp and 0.02 pp fall, respectively, again, corresponding to a 10% and 8% of the sample averages. Overall these results lend strong support to our theoretical argument.

## 6.3 Validating the Identification Assumption

We then perform three complementary exercises to validate of our identification assumption. First, we test the parallel trends assumption following the econometric specification presented in equation (2). Figure 4 plots the resulting coefficients for the interactions between rural militia presence and the quinquennial indicators. We present three graphs, one for each of our dependent variables. The results support the validity of our identification assumption. Before 1965, when the PRI's power was not challenged and the rural militias were not given a renewed coercive role to combat the rising rural discontent, the interaction coefficients are close to zero and statistically indistinguishable from those of the 1961-1965 quinquennium. This indicates that, prior to 1965, land redistribution trended together in places with varying presence of rural

militias. However, consistent with the results in Table 3, Figure 4 shows that, after 1965, the interaction coefficients become consistently negative and often statistically different from those of the 1961-1965 quinquennium.

Second, we conduct a placebo test dropping all the information after 1965 and using 1950 instead as the breakpoint that defines the Post indicator in our main specification in equation (1). If there were differential trends of redistribution prior to 1965, there should be a significant coefficient in the interaction between the Post-1950 indicator and our measure of municipal rural militias that would challenge the validity of the identification assumption. Table 4 presents the results of this placebo test which are reassuring. The coefficients are not just statistically insignificant but at least half of the size of those in our baseline specification in Table 3.

Finally, to further rule-out differential trends in the land redistribution prior to 1965 across municipalities with varying rural militia presence, in Table 5 we show that, when we add 5-, 10- and 15-year leads of the Post-1965 indicator interacted with our measure of municipal rural militias to the baseline specification in equation (2), none of the interaction coefficients is either statistically significant or sizable. Altogether, these three exercises support the validity of our identification strategy.

## 6.4 Ruling out alternative explanations

Next we present additional empirical exercises that deal with the main alternative mechanisms that could drive our main estimates of interest.

**State politics** – Since much of Mexican politics, and certainly the land redistribution in the form of *ejidos*, was determined at the state level, one concern is that our results are driven by few states exhibiting distinct patterns of land redistribution after the 1960s. To address this potential concern, estimates in Table 6 also include state-specific time trends. In this specification, identification then comes from variation in rural militia presence across municipalities within the same state, and not from comparisons of municipalities across states. Results indicate that the estimates are essentially unchanged in terms of

statistical size and significance relative to those in Table 3.

**Omitted variables** – There is also the potential concern that our estimates are driven by omitted municipal factors that correlate with rural militia presence. We test for the relevance of this concern with the following specification:

$$\log(\text{Redistribution}_{m,t}) = \gamma \cdot (\text{Post1965}_t \times \text{Militias}_m) + \sum_i \eta_m^i (\text{Post1965}_t \times X_m^i) + \alpha_m + \delta_t + \varepsilon_{m,t} \quad (4)$$

where  $X_m^i$  is a set of (predetermined) municipal characteristics. Since the set of variables  $X_m^i$  must be exogenous to rural militia presence, we focus on geographic and climatic municipal variables that could potentially both correlate with the the presence of rural militias and affect the redistribution of agricultural land. These variables include municipal area, average rainfall and rain variability, soil humidity and its variability, average altitude and its variability (ruggedness), as well as various moments of the temperature distribution (average, minimum, maximum and median).

We first assess whether those predetermined municipal variables are correlated with rural militia presence at the municipality level. These associations are examined in Appendix Table A1, which considers specifications in which we run those municipal characteristics on our rural militia measure while also including state fixed effects. We effectively observe that several municipal characteristics are correlated with the presence of rural militias. Thus, it is a legitimate concern that our estimates on the influence of rural militias on land redistribution choices might be independently driven by other factors correlated with our measure of rural militia presence.

We then directly assesses the extent of this concern by running the specification in equation (4) in which we control for the interaction of the post-1965 indicator with all the above-mentioned predetermined municipal geographic and climatic characteristics, as well as state-specific time trends. While the results in Table 7 indicate that some of these characteristics have an independent differential effect on the allocation of *ejidos* after

1965,<sup>12</sup> none of these potentially confounding variables can account for our main results. Once we control for the interaction with all the climatic and geographic characteristics, the coefficients on the interaction with our measure of rural militias remain statistically significant and with very similar magnitudes to those reported in Table 3.

**Mean reversion and ceiling effects** – Another potential concern is that our estimates simply reflect mean reversion or ceiling effects. More land could have been allocated in municipalities with more rural militias initially, and consequently these municipalities had less land available for redistribution. If either of these two situations were the case, there would have been less land available for redistribution in those municipalities over time. Consequently, our results could be explained by differences in the land available for redistribution over time rather than by the mechanism proposed by our theory. To empirically address these potential concerns, we control for mean reversion and ceiling effects by running a specification analogous to equation (4), where  $X_m$  is a measure of either the stock of allocated *ejidos* or the stock of agricultural land still available for redistribution (but not yet redistributed at time  $t$  in municipality  $m$ ). By including these interactions we can address whether our results are driven by mean reversion or ceiling effects, respectively.

Panel A of Table 8 shows the estimates of the specifications that address the concern of ceiling effects. We estimate the stock of agricultural land available for distribution at time  $t$  in municipality  $m$  by subtracting the stock of land allocated from 1914 to 1939 from all the agricultural land available.<sup>13</sup> Panel B of Table 8 reports the specification that deals the the concern of mean reversion by including the number of *ejidos* that had been granted in the municipality between 1914 and 1939 and its interaction with the post-1965 indicator. The estimates indicate that, even though in municipalities with a larger stock

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12. In particular, the interactions of the post-1965 indicator with the area, temperature, and ruggedness are statistically significant across all specifications.

13. More specifically, using the INEGI's 2007 Agricultural Census and the PHINA's records of land granted, we calculate the stock of land available for redistribution as:

$$\text{LandAvailable}_m = \text{Agricultural land 2007}_m - \text{Stock of land granted from 1914 to 1939}_m,$$

where  $\text{Agricultural land 2007}_m$  is all of the agricultural land, and thus the potential land available for redistribution, and  $\text{Stock of land granted from 1914 to 1939}_m$  includes the accumulated outright grants, restitutions and enlargements.

of land available for redistribution and fewer *ejidos* granted by 1939 experienced more land redistribution after 1965, the coefficients on the interaction between the measure of militias and the post-1965 indicator remain not only significant but also similar in size to those reported in Table 3 across our three outcomes. Overall, these findings lessen the concern that our results might be capturing mean reversion or ceiling effects.

**Spillover effects** – Even though militia groups operated very locally and were embedded in specific territories, one may be concerned that rural militias were moving across municipalities for reasons endogenous to the spatial distribution of land grants. In order to address this concern, we focus on the potential impact of the neighboring militia presence on the patterns of land redistribution. Specifically, we run:

$$\begin{aligned} \log(\text{Redistribution}_{m,t}) = & \alpha_m + \delta_t + \gamma \cdot (\text{Post 1965}_t \times \text{Militias}_m) \\ & + \rho \cdot \left( \text{Post 1965}_t \times \frac{1}{K_i} \sum_{k=1}^{K_i} \text{Militias}_k \right) + \varepsilon_{m,t} \end{aligned} \quad (5)$$

Where  $k$  indexes municipality  $i$ 's neighbors and  $K_i$  represents the total number of neighbors of municipality  $i$ . Table 16 shows the estimated results. Even though we get one barely significant coefficient for the log number of *ejidos* all our qualitative results remain unchanged lessening the concern that our results might be biased by spillover effects.<sup>14</sup>

**Strength of local elites** – An alternative explanation behind our results is that of a higher resistance of landed elites in municipalities with more rural militias since, as highlighted in Section 3.1, militias were seen by the government as a way to counter the power of landed elites. Specifically, the concern is that the interaction between rural

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14. In the appendix, we also estimate a spatial autoregressive model using our panel data to understand potential spillover effects beyond first neighbors and in terms of unobserved shocks. To do so, we follow Lee2010 and run the following model in matrix notation for the main equation and the error term:

$$\begin{aligned} \text{Redistribution}_{mt} = & \lambda_0 \mathbf{W}_n (\text{Post1965} \times \text{Militia}_{mt}) + \alpha_m + \delta_t + U_{mt} \\ U_{mt} = & \sigma_e \mathbf{W}_n U_{mt} + V_{mt}, V_{mt} \sim N(0, 1) \end{aligned}$$

Where  $\mathbf{W}_n$  is an adjacency matrix between municipalities which entries are equal to  $1/\text{distance}_{i,j}$ . We present the results of the maximum likelihood estimation of this model in Table A2 where we calculate, the total, direct and indirect effects of militia presence on redistribution post 1965. Even though the spillovers are large using this modeling, those effects do not account for the our main qualitative results.

militia presence and the post-1965 indicator captures the omitted interaction between the strength of local rural elites and the post-1965 indicator instead. To rule out this alternative interpretation of our findings, in Table 9 we control for such an interaction where we measure the strength of those elites using the number of large landholdings—*ranchos* and *haciendas*—in each municipality. The estimates suggest that, in municipalities with more large landholdings, effectively less land redistribution in the form of *ejidos* took place after the 1960s. However, the size and statistical significance of our coefficients of interest are in line with those of our baseline results in Table 3. These estimates therefore dismiss the concern that our findings are driven by stronger local elites in municipalities with more rural militia presence.

**Cristero’s Rebellion** – Another related concern is that, in municipalities with more militias, there were fewer expressions of dissent during the 1960s, and thus less need of redistribution to placate them. In fact, [Sánchez-Talanquer \(2018\)](#) shows that the Catholic Cristero Rebellion (1926-1929) that was crushed by the state shaped the location of rural militias across Mexican municipalities. There is then the possibility those municipalities involved and defeated during the Cristero Rebellion, which also had more rural militias, were less likely to express dissent during the 1960s.

To rule out this possibility, we add as a control an indicator for whether a municipality was involved in the Cristero Rebellion interacted with the Post-1965 indicator. We use information about the municipalities that joined the counterrevolutionary Cristero Rebellion from [Sánchez-Talanquer \(2018\)](#). The estimates in Table 10 indicate that, even though municipalities involved in Cristero Rebellion effectively experienced less land redistribution after 1965, our coefficients of interest remain not only statistically significant but also similar in size to those from our baseline specification reported in Table 3.

**Success of the social dissent** – One last issue is that our main estimates simply capture the suppression of expressions of social dissent including demands for land redistribution by rural militias. In other words, since Table 2 shows that rural militias



were effective at deterring or mitigating those expressions, the negative estimates on the interaction between our measure of rural militias and the post-1965 indicator might not then capture more land redistribution in the form of *ejidos* in municipalities with fewer rural militias but simply less redistribution in those municipalities with more militias. While this is not only consistent with our theoretical argument but also one of its empirical implications, we provide empirical evidence that our estimates are also partly driven by increased redistribution in municipalities with few rural militias after the mid 1960s.

Providing evidence of both less land redistribution in municipalities with more militias and more redistribution in municipalities with fewer militias after the mid 1960s is empirically challenging since our difference-in-differences strategies only causally identifies differences in land redistribution after the mid 1960s across those two types of municipalities but not within. To partially empirically disentangle these two effects, we additionally control for our measure of social and political protests and its interaction with the post-1965 indicator at the risk of including a “bad control,” given that our theoretical argument suggests that these are an outcome of the presence of rural militias.

Subject to this caveat, results in Table 11 indicate that the presence of rural militias significantly affects land redistribution after the mid 1960s independently from its effect on social and political protests, and thus lend further support to the empirical implications of our theoretical argument.

## 7 Conclusion

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**Table 1: Summary statistics**

Variable	Mean	Std. Dev.	Min.	Max.	N
<i>Panel A: Varying at the municipality <math>\times</math> year level</i>					
Log(1+Ejidos)	0.065	0.343	0	5.737	129320
Log(1+Area)	0.382	1.801	0	16.955	129320
Log(1+Beneficiaries)	0.236	1.131	0	12.627	129320
<i>Panel B: Varying at the municipality level</i>					
Militias	14.178	33.019	0	520.833	2334
Protests	19.205	80.48	0	2272.727	2371
Cristero Rebellion	0.273	0.446	0	1	2260
Log(1+Any Event)	0.386	0.762	0	5.118	2440
Log(1+Strikes)	0.113	0.439	0	4.094	2440
Log(1+Grievances Complaint)	0.212	0.526	0	4.094	2440
Log(1+Students Teachers Related)	0.078	0.377	0	4.533	2440
Log(1+Unions Related)	0.133	0.461	0	3.871	2440
Log(1+Public Services Related)	0.054	0.254	0	3.401	2440
Log(1+ Unrelated to Agric.)	0.26	0.659	0	5.063	2440
Land Available	40113.624	122032.683	0	2538643	2236
Ranchos and Haciendas	2.524	1.758	0	7.076	2455
Log(Municipality Area)	801.926	2027.134	4.34	51952.262	2426
Average Monthly Rain	90.593	52.026	7.113	360.99	2426
Rain Variability	78.018	40.381	3.795	275.258	2426
Average Soil Humidity	197.509	83.236	0	360	2440
Soil Humidity Variability	34.244	30.29	0	182.483	2440
Average Altitude	1440.362	874.929	0	3812.9	2440
Ruggedness	255.657	188.868	0	1151.31	2440
Average Temperature	19.073	3.863	8	28	2456
Minimum Temperature	17.537	4.456	2	28	2456
Maximum Temperature	20.971	3.869	10	30	2456
Median Temperature	19.201	3.869	7	28	2456

*Notes: Information on land redistribution corresponds to data from 1940 to 1992. Militias corresponds to the number of militia groups from 1932 to 1946 per 100,000 inhabitants in 1930. Protests corresponds to the number of social discontent events from 1960 to 1969 per 100,000 inhabitants.*

**Table 2: Militia presence and Social Discontent**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Logarithm of 1+...	Any Event	Strikes	Grievances Complaint	Students Teachers Related	Unions Related	Public Services Related	Unrelated to Agriculture
Militias	-0.0262* (0.0145)	-0.0205** (0.0099)	-0.0183** (0.0089)	-0.0136** (0.0063)	-0.0213* (0.0115)	-0.0125** (0.0059)	-0.0252** (0.0119)
Controls	✓	✓	✓	✓	✓	✓	✓
State Fixed Effects	✓	✓	✓	✓	✓	✓	✓
Observations	2,329	2,329	2,329	2,329	2,329	2,329	2,329
R-squared	0.1832	0.0910	0.1489	0.0947	0.1003	0.1219	0.1295

Notes: Cross section of municipalities. Militias corresponds to the municipal number of militias present between 1932 and 1946 per 100,000 inhabitants in 1930. Coefficients are standardized. Controls include all the ones specified in Table A1. Standard errors clustered at the state level in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$



**Table 3: Baseline Results**

	(1)	(2)	(3)
Dependent Variable:	Log(1+Ejidos)	Log(1+Area)	Log(1+Beneficiaries)
Post1965 $\times$ Militias	-0.008*** (0.002)	-0.039*** (0.012)	-0.023*** (0.008)
Municipality Fixed Effects	✓	✓	✓
Year Fixed Effects	✓	✓	✓
Observations	123,596	123,596	123,596
R-squared	0.012	0.014	0.013
Number of Municipalities	2,332	2,332	2,332

*Notes: Panel of Municipalities from 1940 to 1992. Militias corresponds to the number of militia groups from 1932 to 1946 per 100,000 inhabitants in 1930. Coefficients are standardized. Standard errors clustered at the municipality level in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$*

**Table 4: Placebo**

	(1)	(2)	(3)
Dependent Variable:	Log(1+Ejidos)	Log(1+Area)	Log(1+Beneficiaries)
Post1950 $\times$ Militias	-0.003 (0.004)	-0.011 (0.020)	-0.009 (0.012)
Municipality Fixed Effects	✓	✓	✓
Year Fixed Effects	✓	✓	✓
Observations	60,632	60,632	60,632
R-squared	0.008	0.009	0.009
Number of Municipalities	2,332	2,332	2,332

*Notes: Panel of Municipalities from 1940 to 1965. Militias corresponds to the number of militia groups from 1932 to 1946 per 100,000 inhabitants in 1930. Coefficients are standardized. Standard errors clustered at the municipality level in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$*

**Table 5: Ruling-out Anticipation**

Dependent Variable:	(1) Log(1+Ejidors)	(2) Log(1+Area)	(3) Log(1+Beneficiaries)
1 (Year of Allocation + 0 $\geq$ 1965) $\times$ Militias	-0.010** (0.004)	-0.049** (0.022)	-0.029** (0.013)
1 (Year of Allocation + 5 $\geq$ 1965) $\times$ Militias	0.005 (0.004)	0.020 (0.023)	0.011 (0.014)
1 (Year of Allocation + 10 $\geq$ 1965) $\times$ Militias	0.002 (0.003)	0.005 (0.019)	0.006 (0.012)
1 (Year of Allocation + 15 $\geq$ 1965) $\times$ Militias	-0.006 (0.004)	-0.021 (0.018)	-0.016 (0.011)
Municipality Fixed Effects	✓	✓	✓
Year Fixed Effects	✓	✓	✓
Observations	123,596	123,596	123,596
R-squared	0.012	0.014	0.013
Number of Municipalities	2,332	2,332	2,332

*Notes: Panel of Municipalities from 1940 to 1965. Militias corresponds to the number of militia groups from 1932 to 1946 per 100,000 inhabitants in 1930. Coefficients are standardized. Standard errors clustered at the municipality level in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$*

**Table 6: Controlling for State Trends**

	(1)	(2)	(3)
Dependent Variable:	Log(1+Ejidos)	Log(1+Area)	Log(1+Beneficiaries)
Post1965 $\times$ Militias	-0.008*** (0.002)	-0.039*** (0.012)	-0.024*** (0.007)
Municipality Fixed Effects	✓	✓	✓
Year Fixed Effects	✓	✓	✓
State <sub>i</sub> $\times$ t	✓	✓	✓
Observations	123,596	123,596	123,596
R-squared	0.015	0.017	0.016
Number of Municipalities	2,332	2,332	2,332

*Notes: Panel of Municipalities from 1940 to 1992. Militias corresponds to the number of militia groups per 100,000 inhabitants in 1930. Coefficients are standardized. Standard errors clustered at the municipality level in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$*

**Table 7: Controlling for State Trends and Interacted Covariates**

Dependent Variable:	(1) Log(1+Ejidors)	(2) Log(1+Area)	(3) Log(1+Beneficiaries)
Post1965 $\times$ Militias	-0.0063*** (0.0023)	-0.0313** (0.0122)	-0.0189** (0.0073)
<i>Additional Controls</i>			
Post1965 $\times$ Log of municipality area	0.0146** (0.0059)	0.1078*** (0.0308)	0.0486*** (0.0167)
Post1965 $\times$ Average Monthly Rain	-0.0002 (0.0086)	0.0276 (0.0435)	0.0233 (0.0278)
Post1965 $\times$ Rain Variability	-0.0052 (0.0085)	-0.0469 (0.0436)	-0.0377 (0.0277)
Post1965 $\times$ Average Soil Humidity	0.0008 (0.0027)	0.0005 (0.0142)	0.0015 (0.0087)
Post1965 $\times$ Soil Humidity Variability	0.0013 (0.0023)	-0.0017 (0.0119)	-0.0007 (0.0075)
Post1965 $\times$ Average Altitude	0.0011 (0.0046)	-0.0026 (0.0245)	0.0024 (0.0152)
Post1965 $\times$ Ruggedness	0.0071* (0.0042)	0.0476** (0.0218)	0.0263* (0.0135)
Post1965 $\times$ Average Temperature	0.0737 (0.0533)	0.3680 (0.2738)	0.1847 (0.1640)
Post1965 $\times$ Minimum Temperature	-0.0152 (0.0198)	-0.1408 (0.1007)	-0.0639 (0.0616)
Post1965 $\times$ Maximum Temperature	-0.0258 (0.0168)	-0.1786** (0.0846)	-0.0772 (0.0521)
Post1965 $\times$ Median Temperature	-0.0373 (0.0405)	-0.0782 (0.2084)	-0.0548 (0.1251)
Municipality Fixed Effects	✓	✓	✓
Year Fixed Effects	✓	✓	✓
State <sub>i</sub> $\times$ t	✓	✓	✓
Observations	123,331	123,331	123,331
R-squared	0.0131	0.0150	0.0141
Number of Municipalities	2,327	2,327	2,327

Notes: Panel of Municipalities from 1940 to 1992. Militias corresponds to the number of militia groups per 100,000 inhabitants in 1930. Coefficients are standardized. Standard errors clustered at the municipality level in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table 8: Controlling for the Stock of Allocated *Ejid*os and the Land Available for Redistribution**

	(1)	(2)	(3)
Dependent Variable:	Log(1+Ejid <sub>os</sub> )	Log(1+Area)	Log(1+Beneficiaries)
<i>Panel A : Controlling for Land Available for Redistribution in 1939</i>			
Post1965 × Militias	-0.008*** (0.003)	-0.041*** (0.015)	-0.025*** (0.009)
Post1965 × Land Available	0.011** (0.005)	0.098*** (0.024)	0.043*** (0.013)
Observations	112,943	112,943	112,943
R-squared	0.014	0.016	0.015
Number of Municipalities	2,131	2,131	2,131
<i>Panel B : Controlling for Stock of Ejidos Granted before 1939</i>			
Post1965 × Militias	-0.008*** (0.002)	-0.039*** (0.012)	-0.023*** (0.007)
Post1965 × Stock	-0.020*** (0.003)	-0.100*** (0.018)	-0.062*** (0.011)
Observations	123,596	123,596	123,596
R-squared	0.013	0.015	0.014
Number of Municipalities	2,332	2,332	2,332
Municipality Fixed Effects	✓	✓	✓
Year Fixed Effects	✓	✓	✓

*Notes: Panel of Municipalities from 1940 to 1992. Militias corresponds to the number of militia groups from 1932 to 1946 per 100,000 inhabitants in 1930. Coefficients are standardized. Standard errors clustered at the municipality level in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$*

**Table 9: Controlling for the Power of Local Elites**

	(1)	(2)	(3)
Dependent Variable:	Log(1+Ejidios)	Log(1+Area)	Log(1+Beneficiaries)
Post1965 × Militias	-0.008*** (0.002)	-0.040*** (0.012)	-0.024*** (0.007)
Post1965 × Ranchos and Haciendas	-0.014*** (0.003)	-0.061*** (0.018)	-0.037*** (0.010)
Municipality Fixed Effects	✓	✓	✓
Year Fixed Effects	✓	✓	✓
Observations	123,596	123,596	123,596
R-squared	0.013	0.014	0.014
Number of Municipalities	2,332	2,332	2,332

Notes: Panel of Municipalities from 1940 to 1992. Militias corresponds to the number of militia groups from 1932 to 1946 per 100,000 inhabitants in 1930. Coefficients are standardized. Standard errors clustered at the municipality level in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table 10: Controlling for Whether the Municipality was Involved in the Cristero Rebellion**

	(1)	(2)	(3)
Dependent Variable:	Log(1+Ejidios)	Log(1+Area)	Log(1+Beneficiaries)
Post1965 × Militias	-0.006** (0.002)	-0.026** (0.011)	-0.015** (0.007)
Post1965 × Cristero Rebellion	-0.018*** (0.006)	-0.124*** (0.031)	-0.073*** (0.019)
Municipality Fixed Effects	✓	✓	✓
Year Fixed Effects	✓	✓	✓
Observations	118,243	118,243	118,243
R-squared	0.013	0.014	0.014
Number of Municipalities	2,231	2,231	2,231

Notes: Panel of Municipalities from 1940 to 1992. Militias corresponds to the number of militia groups from 1932 to 1946 per 100,000 inhabitants in 1930. Cristero's War is an indicator for whether the municipality was involved in the Cristero Rebellion. Coefficients are standardized. Standard errors clustered at the municipality level in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table 11: Are We just Capturing the Suppression of Expressions of Social Dissent Including Demands for Land Redistribution by Rural Militias?**

	(1)	(2)	(3)
Dependent Variable:	Log(1+Ejidos)	Log(1+Area)	Log(1+Beneficiaries)
Post1965 $\times$ Militias	-0.008*** (0.002)	-0.039*** (0.012)	-0.023*** (0.007)
Post1965 $\times$ Protests	-0.005* (0.003)	-0.020 (0.016)	-0.016* (0.009)
Municipality Fixed Effects	✓	✓	✓
Year Fixed Effects	✓	✓	✓
Observations	123,437	123,437	123,437
R-squared	0.012	0.014	0.013
Number of Municipalities	2,329	2,329	2,329

*Notes: Panel of Municipalities from 1940 to 1992. Militias corresponds to the number of militia groups from 1932 to 1946 per 100,000 inhabitants in 1930. Protests corresponds to the number of social discontent events from 1960 to 1969 per 100,000 inhabitants. Coefficients are standardized. Standard errors clustered at the municipality level in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$*



**Table 12: Differential Effect of Militias on Social Dissent**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Logarithm of 1+...	Any Event	Strikes	Grievances Complaint	Students Teachers Related	Unions Related	Public Services Related	Unrelated to Agricul- ture
Post1965 $\times$ Militias	0.004* (0.002)	0.001 (0.001)	0.001 (0.001)	-0.001 (0.001)	0.003*** (0.001)	0.002*** (0.000)	0.003 (0.002)
Municipality Fixed Effects	✓	✓	✓	✓	✓	✓	✓
Year Fixed Effects	✓	✓	✓	✓	✓	✓	✓
Observations	23,320	23,320	23,320	23,320	23,320	23,320	23,320
R-squared	0.008	0.006	0.005	0.004	0.003	0.006	0.007
Number of Municipalities	2,332	2,332	2,332	2,332	2,332	2,332	2,332

Notes: Panel of Municipalities from 1960 to 1969. Militias corresponds to the number of militia groups from 1932 to 1946 per 100,000 inhabitants in 1930. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table 13: Are we capturing the Bureaucracy presence?**

Dependent Variable:	(1) Log(1+Ejidors)	(2) Log(1+Ejidors)	(3) Log(1+Area)	(4) Log(1+Area)	(5) Log(1+Beneficiaries)	(6) Log(1+Beneficiaries)
Post1965 $\times$ Militias	-0.0077*** (0.0024)	-0.0078*** (0.0023)	-0.0381*** (0.0124)	-0.0371*** (0.0116)	-0.0228*** (0.0075)	-0.0232*** (0.0071)
Post1965 $\times$ Local Bureaucrats 1940	0.0012 (0.0028)	0.0092*** (0.0031)	0.0064 (0.0154)	0.0532*** (0.0169)	0.0050 (0.0089)	0.0305*** (0.0100)
Post1965 $\times$ Non Local Bureaucrats 1940	0.0006 (0.0030)	0.0016 (0.0029)	0.0091 (0.0178)	0.0009 (0.0145)	0.0026 (0.0103)	-0.0007 (0.0087)
Municipality Fixed Effects	✓	✓	✓	✓	✓	✓
Year Fixed Effects	✓	✓	✓	✓	✓	✓
State <sub>i</sub> $\times$ t		✓		✓		✓
Observations	123,596	123,596	123,596	123,596	123,596	123,596
R-squared	0.0124	0.0156	0.0137	0.0173	0.0133	0.0163
Number of Municipalities	2,329	2,329	2,329	2,329	2,329	2,329

Notes: Panel of Municipalities from 1940 to 1992. Militias corresponds to the number of militia groups from 1932 to 1946 per 100,000 inhabitants in 1930. Non Local Bureaucrats 1940 corresponds to the total number of federal and state bureaucrats per 1000 inhabitants in 1940, whereas Local Bureaucrats 1940 represents the number of municipal bureaucrats per 1000 inhabitants in 1940. Coefficients are standardized. Standard errors clustered at the municipality level in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table 14: Are we capturing state presence proxied as fiscal capacity?**

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent Variable:	Log(1+Ejidors)	Log(1+Ejidors)	Log(1+Area)	Log(1+Area)	Log(1+Beneficiaries)	Log(1+Beneficiaries)
Post1965 $\times$ Militias	-0.0194*** (0.0050)	-0.0185*** (0.0050)	-0.1039*** (0.0261)	-0.0979*** (0.0263)	-0.0611*** (0.0157)	-0.0580*** (0.0159)
Post1965 $\times$ Log(Total Taxes per capita in 1945)	-0.0043 (0.0036)	0.0005 (0.0039)	-0.0135 (0.0185)	0.0067 (0.0199)	-0.0137 (0.0114)	-0.0013 (0.0122)
Observations	77,592	77,592	77,592	77,592	77,592	77,592
R-squared	0.0180	0.0209	0.0199	0.0230	0.0194	0.0222
Number of Municipalities	1,464	1,464	1,464	1,464	1,464	1,464
Post1965 $\times$ Militias	-0.0194*** (0.0050)	-0.0184*** (0.0050)	-0.1035*** (0.0261)	-0.0973*** (0.0263)	-0.0611*** (0.0157)	-0.0578*** (0.0159)
Post1965 $\times$ Log(Total Revenue per capita in 1945)	-0.0026 (0.0037)	0.0018 (0.0039)	-0.0045 (0.0188)	0.0130 (0.0202)	-0.0080 (0.0116)	0.0017 (0.0124)
Observations	77,592	77,592	77,592	77,592	77,592	77,592
R-squared	0.0180	0.0209	0.0199	0.0230	0.0194	0.0222
Number of Municipalities	1,464	1,464	1,464	1,464	1,464	1,464
Municipality Fixed Effects	✓	✓	✓	✓	✓	✓
Year Fixed Effects	✓	✓	✓	✓	✓	✓
State <sub>i</sub> $\times$ t		✓		✓		✓

Notes: Panel of Municipalities from 1940 to 1992. Militias corresponds to the number of militia groups from 1932 to 1946 per 100,000 inhabitants in 1930. Coefficients are standardized. Standard errors clustered at the municipality level in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table 15: Are we capturing just the impact of other state actors like the Church?**

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent Variable:	Log(1+Ejidos)	Log(1+Ejidos)	Log(1+Area)	Log(1+Area)	Log(1+Beneficiaries)	Log(1+Beneficiaries)
Post1965 $\times$ Militias	-0.0080*** (0.0024)	-0.0085*** (0.0023)	-0.0407*** (0.0125)	-0.0418*** (0.0116)	-0.0243*** (0.0075)	-0.0258*** (0.0071)
Post1965 $\times$ Log(Churches per capita in 1939)	-0.0000 (0.0021)	-0.0012 (0.0023)	-0.0037 (0.0114)	0.0008 (0.0121)	0.0010 (0.0070)	0.0014 (0.0075)
Observations	119,674	119,674	119,674	119,674	119,674	119,674
R-squared	0.0127	0.0158	0.0141	0.0176	0.0137	0.0166
Number of Municipalities	2,258	2,258	2,258	2,258	2,258	2,258
Post1965 $\times$ Militias	-0.0080*** (0.0024)	-0.0084*** (0.0023)	-0.0404*** (0.0125)	-0.0409*** (0.0115)	-0.0240*** (0.0075)	-0.0253*** (0.0071)
Post1965 $\times$ Log(Churches per km <sup>2</sup> )	0.0037** (0.0016)	-0.0018 (0.0017)	0.0120 (0.0088)	-0.0111 (0.0089)	0.0093* (0.0055)	-0.0049 (0.0057)
Observations	120,893	120,893	120,893	120,893	120,893	120,893
R-squared	0.0126	0.0156	0.0140	0.0174	0.0136	0.0164
Number of Municipalities	2,281	2,281	2,281	2,281	2,281	2,281
Municipality Fixed Effects	✓	✓	✓	✓	✓	✓
Year Fixed Effects	✓	✓	✓	✓	✓	✓
State <sub>i</sub> $\times$ t		✓		✓		✓

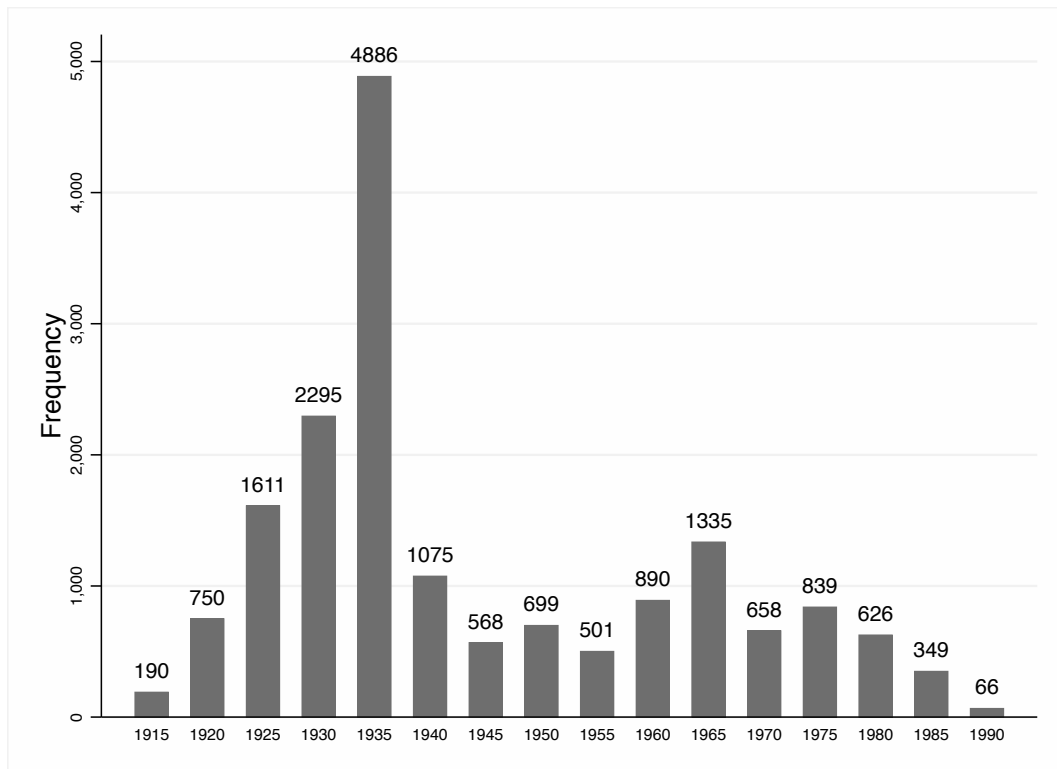
Notes: Panel of Municipalities from 1940 to 1992. Militias corresponds to the number of militia groups from 1932 to 1946 per 100,000 inhabitants in 1930. Coefficients are standardized. Standard errors clustered at the municipality level in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table 16: How much does the direct effect of Militias change if we consider spillover effects?**

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent Variable:	Log(1+Ejidors)	Log(1+Ejidors)	Log(1+Area)	Log(1+Area)	Log(1+Beneficiaries)	Log(1+Beneficiaries)
Post1965 $\times$ Militias	-0.00779*** (0.00241)	-0.00649*** (0.00224)	-0.03899*** (0.01246)	-0.03284*** (0.01175)	-0.02319*** (0.00751)	-0.02023*** (0.00714)
Post1965 $\times \frac{1}{K_i} \sum_{k=1}^{K_i} \text{Militias}_k$		-0.00530* (0.00306)		-0.02509 (0.01565)		-0.01208 (0.00958)
Municipality Fixed Effects	✓	✓	✓	✓	✓	✓
Year Fixed Effects	✓	✓	✓	✓	✓	✓
Observations	123,596	123,596	123,596	123,596	123,596	123,596
R-squared	0.01236	0.01243	0.01368	0.01374	0.01333	0.01336
Number of Municipalities	2,332	2,332	2,332	2,332	2,332	2,332

Notes: Panel of Municipalities from 1940 to 1992. Militias corresponds to the number of militia groups from 1932 to 1946 per 100,000 inhabitants in 1930.  $\frac{1}{K_i} \sum_{k=1}^{K_i} \text{Militias}_k$  represents the equally weighted average of the presence of militias for all the municipality neighbors of municipality  $i$  indexed by  $K_i$ . Coefficients are standardized. Standard errors clustered at the municipality level in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Figure 1: Allocation of *ejidos* over time**



Notes: Number of allocated *ejidos*. Authors' calculation with data from the *Cadaster and History of Agrarian Nuclei - PHINA*.

Figure 2: Municipal rural militias (per 100,000 inhabitants in 1930) between 1932 and 1946

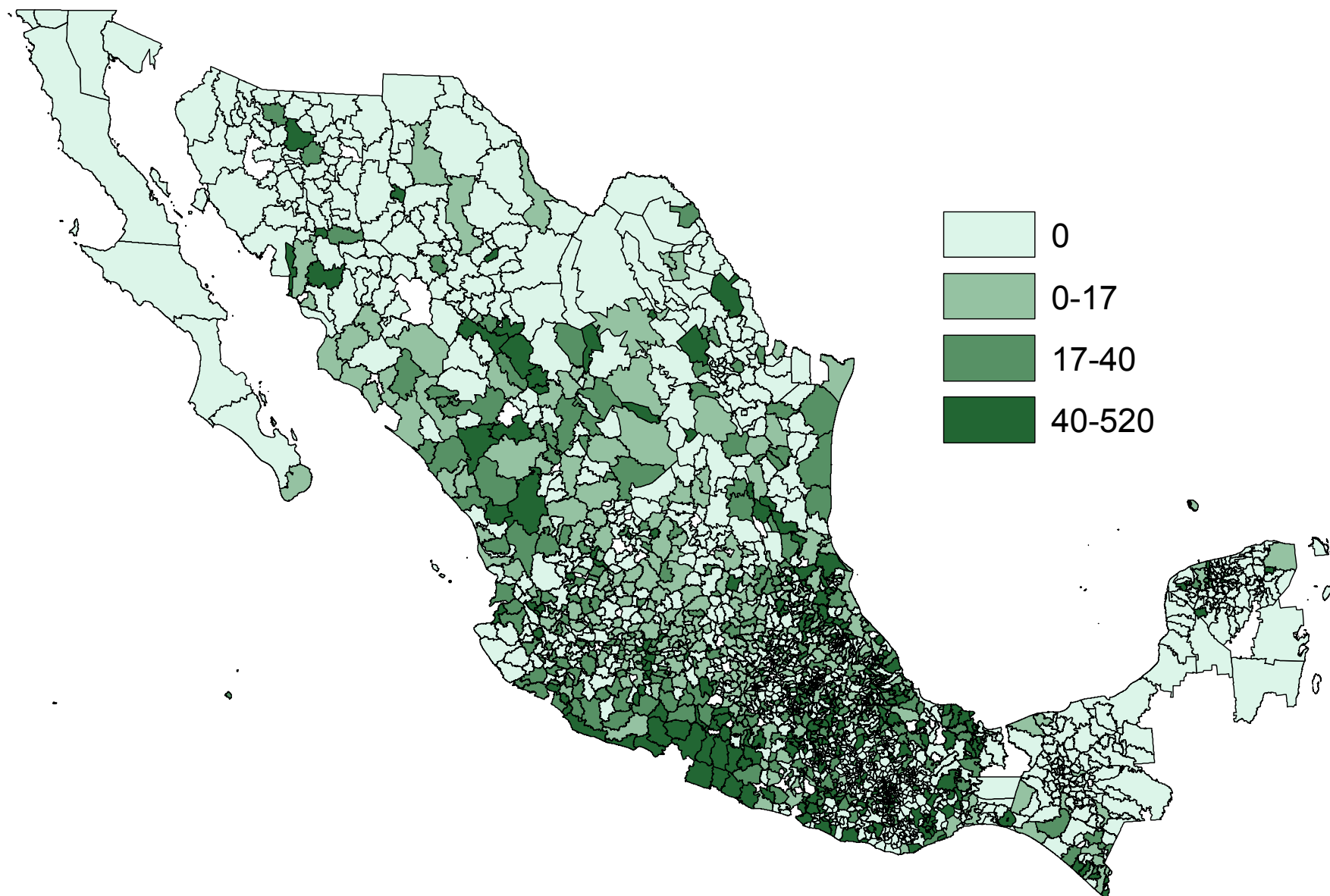
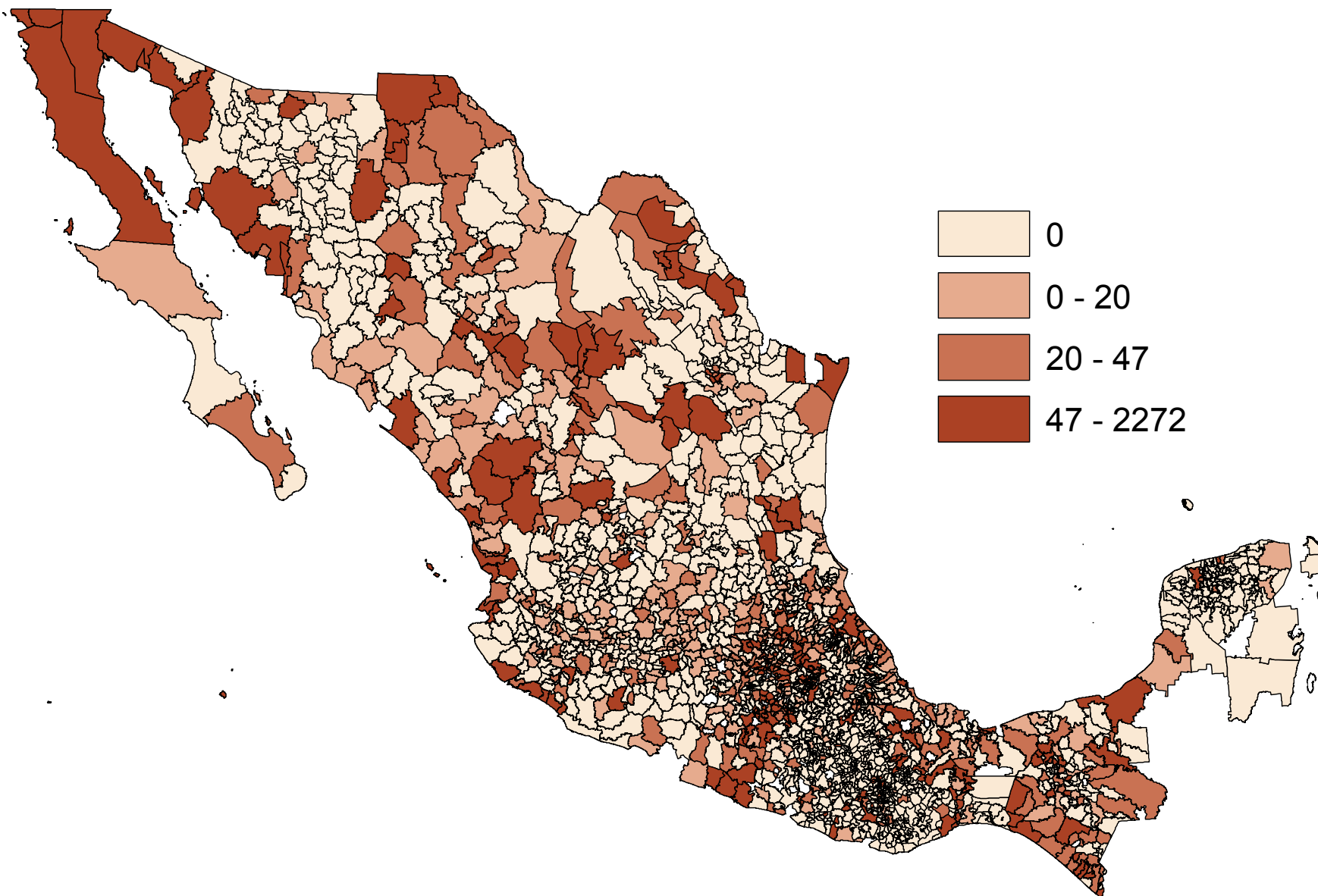


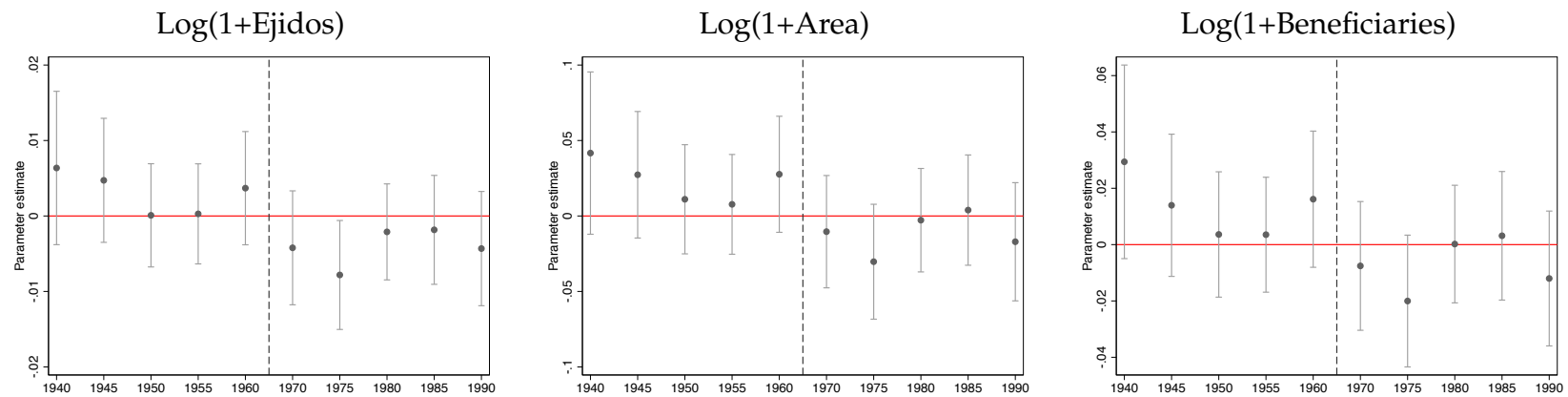
Figure 3: Number of social and political events reflecting discontent (per 100,000 inhabitants in 1930) between 1960 and 1969





**Figure 4: Checking Feasibility of the Parallel Trend Assumption 95% CI**

*Panel A: Baseline (No Controls)*



*Notes: Figure report coefficients of the interaction Quinquennium (or year)  $\times$  Militias. Militias corresponds to the number of militia groups from 1932 to 1946 per 100 thousands individuals in 1930. Coefficients are standardized. Standard errors clustered at the municipality level*

# Appendix

## A Additional tables

Table A1: Covariate Balance

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Log of municipality area	Average Monthly Rain	Rain Variability	Average Soil Humidity	Soil Humidity Variability	Average Altitude	Ruggedness (Altitude variability)	Average Temperature	Minimum Temperature	Maximum Temperature	Median Temperature
Militias	-0.0882 (0.7692)	-0.0124 (0.0306)	0.0107 (0.0304)	0.0040 (0.0660)	-0.0156 (0.0161)	-2.1509*** (0.5231)	-0.1807 (0.1110)	0.0070*** (0.0022)	0.0061** (0.0024)	0.0074*** (0.0017)	0.0075*** (0.0022)
State Fixed Effects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Observations	2,329	2,329	2,329	2,334	2,334	2,334	2,334	2,334	2,334	2,334	2,334
R-squared	0.4281	0.3932	0.3489	0.0741	0.0260	0.4359	0.1821	0.5009	0.4280	0.4953	0.4974

Notes: Cross Section of Municipalities. Militias corresponds to the number of militia groups from 1932 to 1946 per 100 thousands individuals in 1930. Coefficients are standardized. Standard errors clustered at the State level in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table A2: Accounting for Spillover effects using Spatial Autoregressive Model: Maximum Likelihood Estimation**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Dependent Variable:	Log(1+Ejidos)			Log(1+ Area)			Log(1+ Beneficiaries)		
Effect:	Direct	Neighbors	$\sigma_e$	Direct	Neighbors	$\sigma_e$	Direct	Neighbors	$\sigma_e$
Post1965 $\times$ Militias	-0.00646*** (0.00187)	-0.01190*** (0.00412)	0.31907*** (0.00065)	-0.03274*** (0.00984)	-0.05611*** (0.02163)	1.67728*** (0.00341)	-0.02017*** (0.00622)	-0.02713** (0.01367)	1.06017*** (0.00215)
Total Effect: Post1965 $\times$ Militias	-0.0183*** (0.00408)			-0.0888*** (0.000467)			-0.0473*** (0.004749)		
Municipality Fixed Effects	✓			✓			✓		
Year Fixed Effects	✓			✓			✓		
Observations	123,596			123,596			123,596		
Number of Municipalities	2,332			2,332			2,332		

Notes: Panel of Municipalities from 1940 to 1992. Militias corresponds to the number of militia groups from 1932 to 1946 per 100,000 inhabitants in 1930. Estimations by Maximum likelihood assuming normal standard errors with mean zero and standard deviation  $\sigma_e$ . Neighbors effect consider municipalities that are adjacent with the same weight. Coefficients are standardized. Standard errors computed by delta method are in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

## B Coding of events of social and political discontent

To measure social and political discontent during the 1960s, we relied on all issues of Mexico's two main newspapers, *Excelsior* and *El Universal*, from January 1st, 1960 to December 31st, 1969. We searched on the articles' title, subtitle, and main text to identify all news about demonstrations, marches, protests, strikes, and riots for every municipality.

When news do not mention a particular location or when they refer to national or state-level protests, we err on the conservative side and avoid inputting any values to covered municipalities. If instead a given municipality (or municipalities) are listed, we then coded the corresponding location as affected by the protest.

The following words were used to identify news articles about social and political discontent:

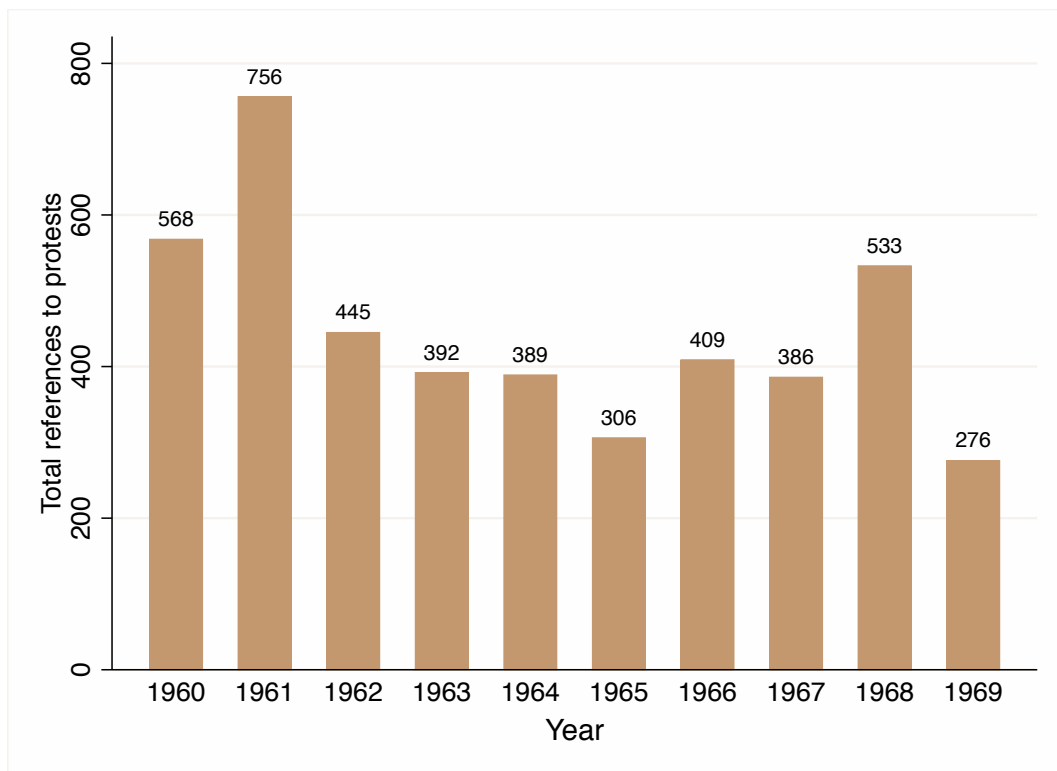
- Manifestaciones (demonstrations) and the n-gram "manifesta\*\*"
- Marchas (marches) and the n-gram "March\*\*"
- Protestas (protests) and the n-gram "protest\*\*"
- Huelgas (strikes) and the n-gram "huelg\*\*"
- Disturbios (riots) and the n-gram "Disturbio\*\*"

Each of the resulting news articles were then verified to identify the municipality of occurrence.

Figure B1 shows the distribution of events of social and political discontent over time. The most common words in the resulting set of articles are the following (excluding common Spanish expressions and distinguishing capital letters):

Freq	Word	Freq	Word	Freq	Word	Freq	Word	Freq	Word
1749	huelga	229	Campesinos	147	Ciudad	109	quienes	93	Tijuana
851	contra	219	Agenda	141	líder	107	entidad	93	labores
656	campesinos	210	aumento	140	general	107	federal	92	secretario
556	trabajadores	208	ciudad	137	Veracruz	107	nuevo	91	Denuncian
435	tierras	206	Obrera	132	Acapulco	106	intervención	91	comercio
413	Sindicato	196	problema	132	Estados	106	movimiento	91	médicos
355	estudiantes	195	Universidad	131	empresas	105	Juárez	91	Morelos
354	Trabajadores	190	obreros	130	agitación	104	mitin	90	textiles
334	conflicto	181	Puebla	126	industria	103	Industria	89	compañía
328	maestros	181	agua	125	Durango	102	municipio	88	Aviación
325	Nacional	178	Unión	123	policía	102	impuestos	88	capital
319	contrato	172	denuncian	123	zona	101	pagos	87	ejidal
315	gobernador	171	piden	122	personas	100	salarios	86	nacional
312	gobierno	166	San	121	manifestación	98	descontento	86	fábrica
300	estados	164	país	121	Estudiantes	98	está	85	Confederación
290	ejidatarios	162	sindicato	121	terrenos	97	Ejidatarios	85	dirigentes
290	empresa	161	revisión	120	Compañía	97	Presidente	85	demandas
283	protesta	159	Mexicana	118	estudiantil	97	Junta	85	hambre
272	paro	158	situación	117	frente	96	evitar	84	escuelas
269	grupo	157	colectivo	117	debido	95	telefonistas	84	agrario
261	México	157	líderes	114	República	95	comerciantes	84	región
258	autoridades	152	problemas	112	alcalde	95	local	84	quejan
249	parte	149	pláticas	112	textil	95	años	83	empleados
247	presidente	148	falta	111	población	94	Federación	83	ejidales
241	Huelga	148	apoyo	109	servicio	94	Piden	82	Maestros
240	municipal	147	Guerrero	109	denuncia	93	Secretaría	80	paros

**Figure B1: Number of social and political events reflecting discontent per year**



Notes: Total number of social and political events reflecting discontent per year as reported in news articles referring to demonstrations, marches, protests, strikes, and riots (excluding national and state level protests not specifying municipality of occurrence).