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COMPETITION  
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CAPACITY:  
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A LAND  
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## ABSTRACT

We develop a model of the politics of state strengthening undertaken by incumbent parties that have a comparative advantage in clientelism rather than in public goods provision. The model suggests that, when politically challenged by opponents, clientelistic incumbents may oppose investing in state capacity. We provide empirical support for the model's implications using a novel measure of local state capacity choice and a difference-in-differences identification strategy, which exploits a national shock that threatened the Mexican Institutional Revolutionary Party's hegemony in the early 1960s with varying intensity in different municipalities.

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## COMPETENCIA POLÍTICAS Y CAPACIDADES DEL ESTADO: EVIDENCIA DE UN PROGRAMA DE ASIGNACIÓN DE TIERRAS EN MÉXICO

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### RESUMEN

Desarrollamos un modelo teórico de las decisiones de fortalecimiento del Estado por parte de partidos con ventaja comparativa en el clientelismo, en lugar de en la provisión de bienes públicos. El modelo sugiere que, cuando son desafiados por opositores políticos, los gobernantes clientelistas pueden oponerse a invertir en capacidad estatal. Ofrecemos evidencia a favor de la teoría utilizando una medida novedosa de decisiones sobre la capacidad del Estado local y con una estrategia de identificación de diferencias-en-diferencias que aprovecha una conmoción nacional que amenazó al Partido Revolucionario Institucional (PRI), pero que tuvo diferente intensidad a través de los municipios mexicanos.

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# Political Competition and State Capacity: Evidence from a Land Allocation Program in Mexico\*

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## Abstract

We develop a model of the politics of state strengthening undertaken by incumbent parties that have a comparative advantage in clientelism rather than in public goods provision. The model suggests that, when politically challenged by opponents, clientelistic incumbents may oppose investing in state capacity. We provide empirical support for the model's implications using a novel measure of local state capacity choice and a difference-in-differences identification strategy, which exploits a national shock that threatened the Mexican Institutional Revolutionary Party's hegemony in the early 1960s with varying intensity in different municipalities.

**Keywords:** state capacity, political competition, land reform

**JEL:** D72, D73

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# 1 Introduction

A recent literature argues that state capacity is central to economic and financial development, and to political stability and democracy (Acemoglu, 2005; Back & Hadenius, 2008; Besley & Persson, 2000, 2010; Fearon & Laitin, 2003). States with strong bureaucratic, fiscal and military capacities can provide significant shares of their societies with public goods, legal environments conducive to businesses and order. Yet many fragile states lack these capacities (Acemoglu, 2005). While there have been increasing academic efforts to understand the sources of state strength (Acemoglu, 2005; Besley & Persson, 2000, 2010), we still lack a definitive understanding of its determinants.

We attempt to fill this gap in two ways. First, we theoretically study how political incentives affect incumbent parties' state capacity choices. In particular, we examine incumbent dominant parties that have a comparative advantage in clientelism (as opposed to public goods provision) compared to opposition parties (Larreguy, 2013). Our model highlights that, since state capacity is a key determinant of the cost of public goods provision, investments in this area undermine the comparative advantage of incumbent clientelistic parties. Therefore incumbent parties have incentives to prevent state capacity strengthening in areas where its dominant political position might be threatened. Second, we provide empirical support to the theoretical implications of the model by exploiting a unique policy program in México. Our empirical design combines a novel measure of local state capacity choice with a national shock that threatened the Institutional Revolutionary Party's (PRI's) hegemony in the early 1960s with varying intensity in different municipalities.

Our novel measure of local state capacity choice originates from a land allocation program that redistributed more than 50% of Mexico's agricultural land between 1910 and 1992 (Dell, 2012; Sanderson, 1984; Torres-Mazuera, 2009). Property rights over the land were allocated in the form of *ejidos* to communities as whole, which were often relocated to the locality where the land was granted. The government then shaped the location of communities since individuals were tied to the land because *ejido* land was not individually owned, and use rights would be forfeited if the peasants moved away (de Janvry, Emerick, Gonzalez-Navarro, & Sadoulet, 2014; Fergusson, 2013). As a result, the government was able to dictate the degree of local state presence in *ejidos* by influencing how far away communities of land petitioners were located from municipal heads. Proximity to the municipal head was a central determinant of local bureaucratic capacity, and consequently, of the cost for the state to reach these areas to provide public goods (Herbst, 2000). Effectively, contemporaneous measures of public goods provision correlate negatively with the distance from the municipality head. We thus use the distance from the municipal head of each *ejido* that was allocated across municipalities over time

as a measure of local state capacity choice.<sup>1</sup>

The Mexican land redistribution program provides not only a novel measure of local state capacity choice but also a unique context in which to study the effect of political incentives on incumbent clientelistic parties' state capacity choices. Mexico specialists argue that the redistribution of land in the form of *ejidos* was central to the consolidation of the PRI's hegemony (e.g., [Silva Herzog \(1959\)](#); [Eckstein \(1968\)](#); [Sanderson \(1986\)](#)). Several authors also contend that the allocation of *ejidos*, in which individuals lacked property rights over the land they worked, created a political dependence that enabled the PRI to maintain a loyal political clientele ([Albertus, Diaz-Cayeros, Magaloni, & Weingast, 2012](#); [Sabloff, 1981](#)), while [Larreguy \(2013\)](#) shows that the PRI's clientelistic networks still operate in *ejidos* in states where the PRI controls the state government. Thus in *ejidos*, the PRI had a stronger comparative advantage in the provision of clientelistic goods relative to opposition parties. However, in contrast to the literature that emphasizes the potential manipulation of the number of *ejidos* allocated, we focus on their location. Our theory builds on the idea that placing *ejidos* far from municipality heads had long-term consequences for state capacity that could benefit incumbent PRI politicians.

We develop a model of political competition between an incumbent clientelistic party and an opposition party. The incumbent party can offer public goods, which benefit the entire population, or particularistic goods, which only benefit its clientelistic base. To capture the incumbent's comparative advantage in clientelism, for simplicity, we assume that the opposition has no clientelistic base and only competes by offering public goods to the whole population. We also assume that the incumbent party chooses the local state capacity strength. The central assumption of the model is that the cost of public goods provision decreases with stronger local state capacity. The first result of the model is that the clientelistic party may benefit from a weak local state capacity. By reducing the cost of public goods provision, a strong local state has two effects on the clientelistic party's welfare. On the one hand, a "real-budget" effect increases the resources that the clientelistic party may use to distribute clientelistic transfers, which is the incumbent's comparative advantage. On the other hand, a "relative-price" effect increases the electoral return of the funds allocated to public goods provision, which is the opposition's comparative advantage. When the latter effect dominates, the incumbent party opposes building a strong local state, since it erodes its electoral comparative advantage.

More importantly, the second result of our model, and a key testable implication, indicates that more political competition can increase the clientelistic party's interest in fostering a weak local state capacity. We model an increase in political competition as an erosion of the incumbent's client base. An increase in political competition has two

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<sup>1</sup>Due to the lack of individual property rights over the granted land, which impeded the collection of property taxes, the land allocation program made it much more difficult for the Mexican state to generate revenues from peasants ([Torres-Mazuera, 2009](#)) – regardless of where the allocated land was located.

effects – a positive direct and a negative indirect – on the incumbent clientelistic party’s incentive to foster weak local state capacity. The direct effect of client-base erosion is that the clientelistic party is less concerned with the “real-budget” cost that a weaker state entails, because it transfers particularistic goods to fewer clients. The indirect effect follows because equilibrium public goods provision is larger with a narrower client base, increasing the concerns about higher costs. Since the direct effect dominates the indirect one, the incumbent clientelistic party is more likely to oppose building a strong state when threatened by stronger political competition.

Our empirical strategy tests whether the PRI forestalled local state capacity by allocating *ejidos* far from municipality heads, especially in areas where it expected stronger political competition. To that end, we exploit the fact that around 1960, the PRI’s hegemony was threatened by increased discontent from various sectors of the population, which was channeled through opposition parties. The intensity of the agitation and the level of increase in political competition varied by municipality. We use a difference-in-differences strategy to test whether, relative to before its power was contested circa the 1960s, the PRI granted *ejidos* farther away from municipality heads in places where it faced more opposition and expected more political contestation.

Our results support the key testable implication of the model, and thus find that increased political competition induced the PRI to strategically forestall local state capacity in order to sustain political support. Our results are not explained by differential trends in contested and uncontested areas, do not show up when we conduct a placebo analysis, and are robust to the inclusion of a battery of controls interacted with our post-1960 indicator. First, they survive when we include the interaction with a host of population, geographic and climatic municipal controls. Second, we rule out the possibility that they are explained by mean reversion and ceiling effects by controlling for the interaction with time-varying measures of the stock of allocated *ejidos* and the land available for allocation in each municipality, respectively. Third, we control for state-specific trends, verifying that the results are not driven by differences in competition between a few states. Fourth, we control for the interaction with the municipal number of *ranchos* and *haciendas* to lessen the concern that our measures of political competition simply reflect the power of the local elites.

We also rule out a series of alternative interpretations of our findings by considering alternative outcomes and various heterogeneous effects. First, we show that our results are not explained by a worsening in the land quality of allocated *ejidos*. Thus, the distance of allocated *ejidos* from municipal heads matters for its own sake, and not because it correlates with land quality. Second, by confirming that there is no effect on the number of allocated *ejidos*, the number of beneficiaries, or the area of the allocated land, we are able to rule out the possibility that our results are explained by a differential distribution of land in more competitive areas, which would be consistent with a PRI strategy of

rewarding supporters and punishing the opposition (Albertus et al., 2012). This is also an important robustness check, given that we model increased political competition as an erosion of the client base of the PRI. Since *ejidos* were a fundamental part of such a client base, one conjecture could be that the PRI simply compensated increased competition with increased *ejido* allocation. Given that it did not – and instead manipulated the distance of *ejidos*, thus affecting the long-term cost of public goods provision – favors our theory’s emphasis on the strategic manipulation of state capacity. Lastly, by showing that our estimates are not larger in municipalities with a higher population density or social capital, or in municipalities with populous municipality heads, we address the concern that our empirical results simply reflect an effort to control the revolting masses by moving them to remote areas (Campante, Do, & Guimaraes, 2014).

Our paper contributes to the literature on the determinants of state capacity. Several scholars study whether and how population density and inter- and intra-state conflicts have contributed to fiscal state capacity in Europe (Tilly, 1992; Gennaioli & Voth, in press), Africa (Herbst, 2000; Thies, 2007) and Latin America (Centeno, 1997; Thies, 2005). We study the role that political constraints play in explaining state capacity choices in contexts where conflict did not lead to state capacity development. Recent work by Acemoglu, Robinson, and Santos (2013) and Fergusson, Robinson, Torvik, and Vargas (2014) studies politicians’ incentives to avoid eliminating non-state armed actors. While our paper shares an emphasis on political incentives to sustain state fragility, we focus on the bureaucratic ability to effectively provide public goods rather than the monopoly of violence.

Our paper is also related to the literature that studies the incentives of clientelistic parties to block civil service reforms (Geddes, 1994; Heredia & Schneider, 2003; Shefter, 1994). While the focus of this literature is on the loss of clientelistic resources with state-strengthening reforms, we emphasize that such reforms might also undermine the comparative advantage of the clientelistic parties by reducing the cost of providing public goods. Lastly, our paper contributes to the Mexican literature on the role of *ejidos* in sustaining the PRI’s hegemonic position (e.g., Silva Herzog (1959), Eckstein (1968); Sanderson (1986)), in which the closest paper to ours is that of Albertus et al. (2012), who argue that the PRI used land allocation to reward loyalists and punish opponents. While they focus on the amount of land allocated as an outcome, we focus on the spatial distribution of such allocations to capture bureaucratic capacity choices.

The rest of the paper is structured as follows. In Section 2 we discuss the historical background, placing particular emphasis on the land redistribution program and the shock that threatened the PRI’s hegemony in the early 1960s, which are central to our empirical exercise. We then outline the model and its main predictions in Section 3. Section 4 summarizes our empirical strategy and data sources. We present our empirical findings and robustness checks in Section 5. In Section 6, we rule out most plausible

alternative explanations to our findings. Section 7 concludes.

## 2 Background

We describe the Mexican land allocation program, highlighting its origins, characteristics and political manipulation by the PRI. We also discuss how the allocation of *ejidos* shaped the spatial distribution of individuals, and thus influenced local states' ability to provide public goods. We then discuss the unprecedented social and political unrest that the PRI faced in the 1960s, how it challenged the PRI's hegemonic position, and how the party dealt with the insurgents and political opposition.

### 2.1 The land redistribution program

A long history of land dispossession fueled the agrarian discontent that contributed to the Mexican Revolution in the early 20th century. Land distribution was thus at the center of the revolution and of Mexico's 1917 constitution; Article 27 of the constitution and subsequent legislation set up a process of land redistribution that persisted throughout the century. Land distributed to peasant communities in the form of *ejidos* was designated communal property, and therefore could not be sold, rented, or used as collateral for credit. Members of the community typically enjoyed inheritable (but otherwise non-transferable) use rights over specific plots that would be lost in the event of an extended absence. Redistribution ceased in 1992, when a program that entailed privatization and the possibility of the commercialization of redistributed land began.

Communities could put forward different types of land petitions. They could request new land grants (*dotaciones*), extensions on existing communal lands (*ampliaciones*) or to have their land restituted (*restituciones*).<sup>2</sup> We restrict our analysis to new land endowments (*dotaciones*), which constituted the bulk of the reform and are more likely to have involved relocating communities. Over time, there were changes regarding: which communities were eligible to receive land in its various forms, the size of plots granted, the definition of property that could be subject to expropriation, and the rights of private landowners to appeal land reform decisions (Sanderson, 1986, Ch. 3). Importantly, none of these changes happened around 1960.

Land allocation only *appeared* to be driven by peasant demands. Rural communities initially had to go through a cumbersome and bureaucratic process to request land from the state governor, who could either reject or conditionally approve their petitions. Final approval was granted first by the National Agrarian Commission, and ultimately by the president. The resulting highly centralized system gave the regime discretion over when and where to allocate land. Albertus et al. (2012), for instance, claim that land

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<sup>2</sup>To ask for land restitution, communities needed legal documentation to prove prior expropriation.

distribution was strategically manipulated, and was higher during election years and in areas with a greater potential for social unrest.

*Ejidors* became key to the party's dominance via clientelistic policies. The lack of individual property rights made peasants highly dependent on the PRI regime as the only source of agricultural credit, investments, and technical assistance (Albertus et al., 2012). Moreover, legislation established the "democratically elected" office of the commissariat to administer each communal land, which included accessing and distributing government programs to the peasants in their communities. This internal organization, together with the PRI's corporatist apparatus, facilitated the development of long-lasting clientelistic networks in communal lands (Larreguy, 2013; Sabloff, 1981).

The PRI's decisions about where to distribute new land endowments had important long-term consequences for local bureaucratic state capacity. Once individuals were located far from municipality heads, they became "tied" to their land, and thus unlikely to migrate. Comparing *ejidatarios* to private peasants with similar small units of production, Yates (1981, p. 151) notes that "in recent times there has been observed a sharp reduction in the number of these [small private] units as their owners have sold out and migrated to the cities, whereas ejidatarios on equally small units being prohibited from selling, are much less mobile."<sup>3</sup> Consistent with Yates (1981), de Janvry et al. (2014) show that households that obtained property right certificates over the land they historically worked, thanks to the titling program started in 1992, were 28% more likely to have a migrant member.

## 2.2 The 1960s threat to PRI's hegemony and its response

The PRI's power was essentially uncontested from the late 1920s to the late 1950s. However, the country's vibrant post-revolution economic growth reached its limits in the late 1950s, which were characterized by general social discontent and protests from the main sectors of society: industrial workers, students, teachers, and peasants. This discontent was channeled into organized political opposition, which represented an important threat to the PRI's hegemony in many areas of the country.

The rural sector was hit particularly hard by the economic crisis throughout the 1950s. International prices of Mexican commodities collapsed, and there was an overall stagnation of agricultural production. From the late 1950s until well into the 1960s, peasant movements organized throughout Mexico, but particularly in the states of Baja California, Morelos, Nayarit, Sinaloa and Sonora. Peasants defied the leaders of the National Peasant Union (CNC) by organizing parallel structures of representation to channel de-

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<sup>3</sup>Yates (1981) later explains the reasons for this phenomenon: "Theoretically, [the ejidatario] is free to leave whenever he wishes, but in practice he is a prisoner tied to his land, because, if he left, the *ejido* would give him no compensation for improvements he may have achieved through years of hard work. He is forbidden by law to rent his land, even to another member of his own *ejido*."

mands for employment, better wages, and increased land redistribution (Bartra, 1985). The PRI government's response was often to send the army to help the local police disband the rural protests and incarcerate the insurgent leaders. The murdering of peasant leaders was also not uncommon. Land invasions became frequent, and many peasant organizations turned into guerrilla groups (Bellingeri, 2003; Herrera Calderón & Cedillo, 2012).

While peasants mobilized in rural areas, industrial workers and teachers actively engaged in protests and strikes in urban centers (Herrera Calderón & Cedillo, 2012) against government control over and cooptation of their unions and leaders. They also demanded better wages and working conditions, and union democracy and autonomy from the state. As with the peasants, the government usually repressed protesters and incarcerated their leaders. During the 1960s students emerged as major political actors (Herrera Calderón & Cedillo, 2012). Their movements proliferated in at least one-third of the nation, particularly in the states of Chihuahua, Guerrero, Jalisco, Michoacán, Nuevo León, Puebla, Sinaloa, Sonora and Tabasco, and Mexico City. Students fought for academic and institutional reforms, broader access to higher education, improvements in infrastructure, intellectual freedom, and against unpopular administrators. Student strikes were also frequent, and were often repressed by the army. The massacre of Tlatelolco in 1968, at which hundreds of students were murdered, was a landmark event in Mexico's history.

The social discontent was absorbed by the political opposition (Bartra, 1985). In the early 1960s, the PRI started to face strong threats in several gubernatorial and municipal races (Bezdek, 1973; Lujambio, 2001). At the gubernatorial level, at least six highly competitive elections occurred in the late 1950s and 1960s in Baja California, Chihuahua, Nayarit, San Luis Potosi, Sonora and Yucatan. Political opposition was largely countered by fraudulent methods. Bezdek (1973) provides extensive accounts of various forms of fraud that were central to the PRI's response to the increased political competition. As a result, despite the increased political competition, the opposition won in only 17 out of approximately 2,400 municipalities, and in one of the 31 states that held elections (Bezdek, 1973; Lujambio, 2001).<sup>4</sup>

To summarize, Mexico's land redistribution program was a central policy of the PRI regime, and allowed the PRI to consolidate its power immediately after the revolution. The PRI further manipulated land redistribution to hold on to power when it began to be politically challenged in the 1960s due to the unprecedented social unrest channeled by opposition parties. Importantly, the PRI's decisions about where to relocate the communities of land petitioners had important long-term consequences for local bureaucratic state capacity. With this background in mind, we discuss a model of state building that

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<sup>4</sup>Three were state capitals: San Luis Potosi in the state of San Luis Potosi; Hermosillo in the state of Sonora and Merida in the state of Yucatan. The winning opposition mayors run in the subsequent gubernatorial elections.

focuses on the incentives that clientelistic parties face when their power is contested.

### 3 A simple model of state building and political competition under clientelism

We develop a simple model in the spirit of [Robinson, Torvik, and Verdier \(2006\)](#) and [Robinson and Verdier \(2013\)](#) to study the incentives that clientelistic parties face concerning state capacity choices.

#### 3.1 Setup

We consider a society in which a clientelistic (C) and a non-clientelistic (NC) party compete for the rents from office  $R$  by splitting an exogenously given budget  $T$  in particularistic transfers ( $\tau$ ) and public goods ( $g$ ). The number of voters is normalized to 1 and there are two types of voters. An exogenously given  $\alpha$  share of voters – which we denote as *clients* – constitutes the clientelistic party’s base of supporters, which benefits from particularistic transfers from the party. The remaining  $1 - \alpha$  share of voters – which we denote as *non-clients* – does not benefit from particularistic transfers. The non-clientelistic party is unable to provide particularistic transfers to voters, and is thus restricted to allocating all resources to public goods provision.<sup>5</sup> The budget constraint can generally be written as:

$$P_g(s)g + \tau = T, \tag{1}$$

where  $P_g(s)$  is the cost of providing public goods and  $s$  is the level of state capacity.

The cost of providing public goods  $P_g(s)$  is a decreasing function of the state capacity level  $s$ ,  $P'_g(s) < 0$ . The debate on how to conceptualize and measure state capacity is old but still active. While some scholars emphasize the state’s coercive capacity (particularly its ability to monopolize the use of violence), others (including us) emphasize the state’s bureaucratic capabilities, which shape its ability to levy taxes and provide public goods. We model stronger states as those with the bureaucratic administrative capacity to provide public goods more efficiently and at lower cost.<sup>6</sup>

We denote the utility that the  $\alpha$  share of clients and the  $1 - \alpha$  share of non-clients

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<sup>5</sup>As emphasized in [Robinson et al. \(2006\)](#) and [Robinson and Verdier \(2013\)](#), particularistic transfers often take the form of public employment, since due to the costly termination of labor contracts, they constitute a more credible commitment to voters than other transfers. We abstract from commitment issues and assume that particularistic transfers can be credibly targeted to particular individuals in order to keep the discussion as simple as possible.

<sup>6</sup>While our model could easily be extended to consider the state’s ability to collect taxes, this would not differentially affect the comparative advantage of clientelistic parties. Therefore we do not expect it to affect the qualitative predictions of the model.

receive from particularistic transfers and public goods, respectively, as:

$$U_{clients} = v(\tau) + u(g), \text{ and}$$

$$U_{non-clients} = u(g),$$

where the utility from public goods  $u(g)$  is increasing and concave,  $u'() > 0$  and  $u''() < 0$ , and for simplicity, the utility of particularistic transfers  $v(\tau)$  is linear with marginal utility  $\beta$ ,  $v(\tau) = \beta\tau$ . In line with [Lindbeck and Weibull \(1987\)](#), all voters also receive an idiosyncratic ideological shock  $\sigma_i$  and a general ideological shock  $\delta$ , both toward the non-clientelistic party. Both shocks are uniformly distributed with a density of 1 and centered at 0.

### 3.2 Characterization

Given the policy vectors  $(g^C, \tau^C)$  and  $(g^{NC})$  proposed by the clientelistic and non-clientelistic parties, respectively, clients support the clientelistic party as long as

$$u(g^C) + \beta\tau^C > u(g^{NC}) + \sigma_i + \delta.$$

Similarly, non-clients support the clientelistic party as long as

$$u(g^C) > u(g^{NC}) + \sigma_i + \delta.$$

Integrating first over  $\sigma_i$  and then over  $\delta$ , the winning probability of the clientelistic party is given by

$$\Pi^C = \frac{1}{2} + \alpha\beta\tau^C + u(g^C) - u(g^{NC}). \quad (2)$$

Notice that the clientelistic party enjoys an electoral advantage thanks to its differential ability to target particularistic transfers to its clients. As consequence, the extent of political competition faced by the clientelistic party is inversely related to the exogenously given  $\alpha$  share of its clients.

We then consider the interaction between the incumbent clientelistic party and the opposition party. The non-clientelistic party faces a trivial optimization problem and allocates all the available budget to public goods provision by setting  $g^{NC*} = T/P_g(s)$ . Substituting the budget constraint in (2), the clientelistic party maximizes its expected payoff ( $\Pi^C \times R$ ) by solving the following problem:

$$\max_{g^C} \left( \frac{1}{2} + \alpha v(T - P_g(s)g^C) + u(g^C) - u(g^{NC}) \right) R.$$

Focusing on an interior optimum,<sup>7</sup> together with budget constraint in (1), the first-order condition,

$$u'(g^{C*}) = P_g(s)\alpha\beta, \quad (3)$$

indicates the optimal level of public goods and particularistic transfers for the clientelistic party. Note that public goods provision is decreasing in  $\alpha$  since, from the first-order condition,  $\frac{\partial g^C}{\partial \alpha} = \frac{P_g(s)\beta}{u''(g^C)} < 0$ . Intuitively, with a larger client base, particularistic transfers become more attractive for the clientelistic party.

### 3.3 Predictions

Consider the model's first prediction. Increasing state capacity may increase or decrease the clientelistic party's payoff.

**Proposition 1. *State capacity and the clientelistic party's payoff***

*The clientelistic party's payoff may be increasing or decreasing in state capacity  $s$ .*

*Proof.* The simple differentiation of the clientelistic party's winning probability in (2) implies

$$\frac{\partial \Pi^C}{\partial s} = \left[ -\alpha g^C \beta + u' \left( \frac{T}{P_g(s)} \right) \frac{T}{P_g^2(s)} \right] P_g' \leq 0.$$

□

The expression for  $\frac{\partial \Pi^C}{\partial s}$  in Proposition 1 shows that an increase in  $s$ , and the consequent fall in  $P_g(s)$ , produces two opposite effects: a “real-budget” effect and a “relative-price” effect. The “real-budget” effect is due to an increase in the resources that the clientelistic party may use to transfer benefits to supporters. Since the ability to do so represents a clientelistic incumbent party's comparative advantage, this first effect strengthens its electoral prospectus and provides incentives to bolster state the capacities. The opposite, “relative-price,” effect – which is caused by a reduction in the cost of providing public goods – increases the public goods that the opposition party may provide.<sup>8</sup> The overall impact of an increase in state capacity on the clientelistic party's payoffs therefore depends on which of these two effects dominates. While this depends on the value of the various model parameters, our empirical application focuses on the role of electoral competition, which we examine more closely in the next proposition.

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<sup>7</sup>We assume that  $\lim_{g \rightarrow 0} u'(g) \rightarrow \infty$  and that  $u'(T/P_g(s)) < \alpha P_g(s)\beta$  so that the interior condition holds.

<sup>8</sup>This reduction in cost also increases the amount of public goods the clientelistic party may provide. However, according to the envelope theorem, the impact of an increase in  $s$  on the clientelistic party's winning probability via the change in  $g^C$  is negligible.

**Proposition 2. Electoral competition and state capacity building**

Consider an increase in the extent of electoral competition faced by the clientelistic party, captured by a decrease in  $\alpha$ . The clientelistic party is more likely to support a reduction in state capacity  $s$  as a result of this increase in competition if and only if  $\rho > 1$ , where  $\rho$  is the relative risk aversion coefficient of  $u(g)$ . Formally,  $\frac{\partial^2 \Pi}{\partial s \partial \alpha} > 0 \iff \rho > 1$ .

*Proof.* Recall that  $\frac{\partial g^C}{\partial \alpha} = \frac{P_g(s)\beta}{u''(g^C)}$ . Substituting  $P_g(s)\beta$  from (3) and using the definition of  $\rho = -\frac{gu''(g)}{u'(g)}$ ,  $\frac{\partial g^C}{\partial \alpha} = -\frac{g^C}{\alpha\rho(g^C)}$ . Substituting this in the cross derivative

$$\frac{\partial^2 \Pi}{\partial s \partial \alpha} = -\beta P'_g \left( g^C + \alpha \frac{\partial g^C}{\partial \alpha} \right),$$

and simplifying, we obtain the stated result.  $\square$

The intuition for this result is the following. An increase in electoral competition faced by the clientelistic party does not change the behavior of the non-clientelistic party. Thus, the “relative-price” effect of a reduction in  $s$  and associated increase in  $P_g(s)$  – the decrease in public goods provision by the opposition – is unchanged. However, an increase in electoral competition faced by the clientelistic party affects directly and indirectly the “real-budget” effects of a reduction in  $s$  – fewer resources are available for particularistic transfers. Directly, the cost of having fewer resources for particularistic transfers is lower with a smaller client base. Indirectly, the equilibrium  $g^C$  increases when  $\alpha$  falls, which increases the “real-budget” cost of a reduction in  $s$ . As long as the direct effect is dominant, the clientelistic party prefers lower state capacity when it faces more electoral competition.

Proposition 2 states that this occurs if and only if  $\rho > 1$ , or in other words, when the utility from public goods exhibits sufficiently strong diminishing marginal returns. The key observation is that when this is the case, as we note above, the clientelistic party provides fewer public goods because their marginal utility is lower. As a consequence, the indirect effect is not very large. Thus the direct effect dominates, and the clientelistic party, when faced with more competition, prefers to strategically reduce state capacity.

When  $\rho < 1$ , the reverse occurs, and electoral competition contributes to strengthening state capacity. In this scenario, contesting the power of the clientelistic party also creates the conditions for clientelism to gradually erode, as an increase in  $s$  and an associated fall in  $P_g(s)$  leads to a decrease in the provision of particularistic transfers. More worrisome (but perhaps also more interesting) is the case of  $\rho > 1$ , when contesting the power of the clientelistic party instead induces it to cling to its client base and its strategy of delivering particularistic goods by making public goods more expensive through a weaker state. As we will see below, this was the case in Mexico.

We end by emphasizing that the PRI could have responded to a surge in competition (i.e., an erosion in the base of clients  $\alpha$ ) by increasing *ejido* allocation in order to produce

new clients. However, as discussed before, the historical episode that we exploit considers a much more generalized erosion of PRI support. Moreover, though they were important, increasing the number of land plots allocated or beneficiaries is likely to have had a modest effect on the base of clients, since land petitioners were likely to fall under the PRI's corporatist apparatus anyway. Instead, the distance of allocated lands from municipal heads shaped the capacity of the state to provide public goods to entire communities, which significantly damaged the election prospects of opposition parties operating there. More importantly, as we show below, there was no differential increase in the extent of land allocation in more competitive municipalities after the 1960s. This allows us to rule out these and other related alternative interpretations.

## 4 Methods and data

### 4.1 Empirical strategy

A key implication of our model is that clientelistic parties should choose weaker state capacity when they are more likely to be challenged by an opponent. To test this prediction, we examine whether the PRI chose weaker local state capacity in municipalities where it faced higher political opposition.

Given the usual lack of historical data on local bureaucratic state capacity over time, a natural indirect outcome with which to explore this relationship is public goods provision. However, the use of such an alternative outcome is problematic for our purposes for several reasons. First, municipal-level data on public goods provision (e.g., percentage of households with access to piped water, sewage or electricity) are only available in census years (approximately every ten years), and we have not been able to retrieve it for most censuses prior to 1960, which makes our identification strategy impossible. Second, the use of public goods provision (or bureaucratic presence, if such data were available) as an outcome exacerbates potential endogeneity concerns. In particular, it may be that more developed areas have better public goods provision (or more public functionaries) for reasons other than improved local state capacity, as well as differential patterns of political competition.

We instead use a novel measure of local state capacity choice: the distance of the *ejidos* from their municipality heads. This measure has several advantages. First, this distance is an important determinant of the local bureaucracy's ability to provide the inhabitants of the newly allocated *ejidos* with public goods, and as such, a direct measure of local state capacity. To reinforce this point, Appendix Table A-1 uses public goods outcomes at the locality level from the 2000 Mexican census to show that distance to municipality heads is negatively associated with contemporary public goods provision, as captured

by the share of households with piped water connections, drainage, or electricity.<sup>9</sup> This is true both in the full set of Mexican localities and in a subsample of localities that intersects with *ejidos*.<sup>10</sup>

The second advantage of our measure is that, compared to public goods provision (and even local bureaucratic state capacity, the deficiencies of which can be compensated for with investments), the distance of the new *ejidos* from their municipality heads captures a permanent choice of local state capacity, given the inhabitants' lack of geographical mobility (de Janvry et al., 2014; Yates, 1981). Third, the decision of whether and where to allocate *ejidos* was solely under the control of the PRI government, which deals with some of the endogeneity issues concerning public goods provision outcomes. Lastly, our novel measure of local state capacity choice is available from the 1910s to the 1990s and varies yearly, which allows us to implement an identification strategy that addresses the remaining concerns regarding the endogeneity of local political competition.

To deal with endogeneity concerns regarding municipal political competition, our identification strategy exploits the national shock that threatened the PRI's hegemony in the early 1960s with varying intensity across municipalities. Our difference-in-differences strategy exploits this plausibly exogenous variation in the extent of political competition. Specifically, we test whether – relative to land allocation patterns before its power was contested circa the 1960s – the PRI granted *ejidos* farther away from municipality heads in areas where it faced more political opposition. Our baseline specification is:

$$\text{Distance}_{e,m} = \alpha + \beta \cdot \text{Post1960}_{e,m} + \gamma \cdot (\text{Post1960}_{e,m} \times \text{Political Competition}_m) + \eta_m + \text{pres}_e + \varepsilon_{e,m}, \quad (4)$$

where the dependent variable is the distance from *ejido*  $e$  to the municipality head, while  $\text{Post1960}_{e,m}$  is a dummy variable that equals 1 if *ejido*  $e$  was created after 1960,  $\text{Political Competition}_m$  is a measure of political competition,  $\eta_m$  are municipality fixed effects, and  $\text{pres}_e$  is a full set of presidential-period fixed effects identifying the period in which *ejido*  $e$  was created. We cluster errors at the municipality level.

We consider three different measures of  $\text{Political Competition}_m$  in municipal races for mayor:

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<sup>9</sup>More specifically, we run the following regression:

$$\text{Share Public Good}_{\ell,m} = \alpha + \delta \cdot \text{Distance}_{\ell,m} + \eta_m + \varepsilon_{\ell,m},$$

where  $\text{Share Public Good}_{\ell,m}$  is the share of households in locality  $\ell$  of municipality  $m$  with either piped water, sewage, or electricity.  $\text{Distance}_{\ell,m}$  is calculated as the distance between the centroids of locality  $\ell$  and municipality head of  $m$ , and  $\eta_m$  denotes municipality fixed effects.

<sup>10</sup>The size of the effects is also important. For instance, a one-standard-deviation increase in distance (21.6 km, see Table 1) is associated with a 5.2 percentage point fall in the share of households with electricity ( $21.6 \times -0.0024$ ). Since the share of households with electricity equals 67.4%, this is quite a sizable effect of 7.7% of average public goods coverage.

- a) **Vote dispersion:**  $1 - \sum_{i=1}^n p_i^2$ , with  $p_i$  equal to the vote share of each of  $n$  parties that run in the considered municipal races
- b) **Opposition vote share:**  $1 - \frac{\text{Votes for PRI}}{\text{Total votes}}$
- c) **Opposition ever won:**  $\begin{cases} 0 & \text{if the PRI won every election in} \\ & \text{the considered municipal races,} \\ 1 & \text{otherwise} \end{cases}$

To calculate these political competition measures, we use only municipal electoral data from the 1980s for two reasons. First, while some municipal electoral results are available for the 1970s, these are not complete, which leads to the concern that their availability is systematically correlated with the level of electoral competition. Second, the 1960s and 1970s were characterized by all sorts of electoral fraud, which we also expect to be associated with the electoral competition faced by the PRI. After the 1977 electoral reform, which paved the way for multiparty competition and cleaner elections, electoral figures are both fully available and much more reliable (Klesner, 1993).<sup>11</sup>

For the case of vote dispersion and opposition vote share – our first two measures of political competition – we consider their averages over all municipal elections during the 1980s. Similarly, we consider whether the opposition won a municipal election during the 1980s to define our third measure of political competition. By considering political competition measures that incorporate several municipal election results, we reduce potential noise coming from particular unusual elections. In our robustness checks in Section 5, we show that our qualitative results are unaffected when we instead restrict our sample to the first municipal election in the 1980s.

A natural potential concern is that municipal electoral competition in the 1980s is a biased proxy for the threat that the PRI faced in the early 1960s, since it is endogenous to some of the same mechanisms emphasized by our theory. Yet if anything, this should bias our estimates against us finding any results: our theory suggests that the PRI should have allocated *ejidos* farther from municipality heads where its power was most threatened in the 1960s, which in turn should have lessened future political competition, particularly in the 1980s. Our competition measures thus capture the persistent presence of opposition parties. Additionally, the likelihood that such an endogeneity might affect our measures of municipal electoral competition in the 1960s could vary across the different measures. However, we show that our results are robust across all of them.

Assuming that our measure of municipal electoral competition in the 1980s is an unbiased proxy for that of the 1960s, there could still be the concern that such a measure is endogenous. However, our difference-in-differences identification strategy addresses this

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<sup>11</sup>Notably, the new electoral legislation shortened the deadline for delivering the results of each polling station from one week to 24 hours for urban precincts and 72 hours for rural ones, which limited the chances of manipulating the results.

concern since it does not exploit increased political contestation in particular municipalities over time, which is likely to be endogenous, but a national-level shock that threatened the PRI’s hegemony differently throughout the country. Accordingly, we show that before the 1960s, there are no differential trends in our measure of local state capacity choice across places with varying political competition.

One last potential concern regarding the interpretation of our empirical results could be that the national-level shock that threatened the PRI’s hegemony in the 1960s varied in different areas due to municipality characteristics that are correlated with electoral competition. We carefully address this concern by taking advantage of the richness of our data. We first make sure that our results are not driven by predetermined municipality characteristics potentially correlated with electoral competition, including differences in population, geography, climate, and strength of rural elites. Second, we rule out the possibility that our results are explained by differences in the stock of allocated *ejidos* or agricultural land available for distribution. Additionally, we discuss a number of possible alternative interpretations of our results and present a series of exercises to address them by studying other outcomes and potential heterogeneous effects.

## 4.2 Data sources and summary statistics

Our empirical analyses require data from a variety of sources. We use data on the spatial location of localities and municipality heads and public service coverage from the 2000 census conducted by the *Instituto Nacional de Estadística y Geografía* (INEGI).<sup>12</sup> We use the location of *ejidos* and their mapping to localities from Mexico’s land certification program, the *Programa de Certificación de Derechos Ejidales y Titulación de Solares*, or PROCEDE. The number of beneficiaries, allocated area, and creation date of each *ejido* come from the *Padrón e Historial de Núcleos Agrarios* (PHINA).<sup>13</sup> The electoral data are from the *BANAMEX-CIDAC* electoral database.<sup>14</sup> Our main electoral competition variables rely on the vote shares of the PRI and opposition parties. In additional exercises, we also classify the opposition as ‘friendly’ or ‘unfriendly’ to the PRI; friendly parties are those classified as “parastatal” parties controlled by the state and only opposing the PRI in appearance (Molinar & Weldon, 1990; Peiro, 1998). The classification of each party listed in our database is shown in Appendix Table A-2.

We construct *ejido*-level measures of climate and geography (e.g., altitude, area, rainfall, soil humidity) using corresponding data from INEGI.<sup>15</sup> We also use INEGI’s historical catalog of localities to construct several variables: municipal log population in 1900 and

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<sup>12</sup><http://www.inegi.org.mx/est/contenidos/Proyectos/ccpv/cpv2000/>

<sup>13</sup>The data were scrapped from <http://phina.ran.gob.mx/phina2/> by Melissa Dell, who generously shared it with us.

<sup>14</sup>[http://www.cidac.org/eng/Electoral\\_Database.php](http://www.cidac.org/eng/Electoral_Database.php)

<sup>15</sup><http://www.inegi.org.mx/geo/contenidos/topografia/default.aspx>

1960, municipality head population in 1960, and number of *ranchos* and *haciendas*.<sup>16</sup> We also construct an index of municipal social capital using data from the 1994 Mexican directory of civil organizations (Secretaría de Gobernación, 1994). In particular, we consider the number of organizations of human rights, popular fronts and peasants.

We also use information about the land quality of the allocated *ejidos* from two different sources. First, we use the inherent land quality index database reported by the U.S. Department of Agriculture that rates soil resilience and performance around the world based on several climate and geological factors.<sup>17</sup> These two dimensions on a three-level scale (low, medium and high resilience and performance) comprise a nine-level land quality index, ranging from the best type with high performance and resilience (class 1) to the worst type, with low performance and resilience (class 9).<sup>18</sup> To interpret this classification as a land quality measure ranging from 1 to 9, we recalculate so that higher values indicate higher land quality. Second, we construct a soil quality measure using data from the UN Food and Agriculture Organization (FAO) that takes into account the major environmental constraints and opportunities for agricultural production.<sup>19</sup> The soil quality measure constitutes a seven-level scale, which we turn into a dummy variable for ease of interpretation.<sup>20</sup> Lastly, we construct the stock of agricultural land available for distribution using data from PHINA and the 2007 Agricultural Census.<sup>21</sup>

Table 1 shows summary statistics for all the variables used in our empirical analyses. There is significant variation in the average distance of *ejidos* to their municipality heads (mean of 18.8 km and standard deviation of 20.3). The PRI's dominance is clear in our main political competition variables, although there is also important variation. On average, the vote dispersion variable equals 0.206 (standard deviation of 0.165). Vote dispersion equals 0 when one party gets all the votes, and  $1 - (1/n)$  when  $n$  parties equally split the vote. Thus, political competition is far the two-party case. Consistent with this figure, the average opposition vote share is close to 16% (standard deviation of 14%), and in 11% of municipalities the opposition won at least one election in the 1980s. When measuring these variables using data from the first election in 1980, there is on average less competition, although the variation across municipalities is similar in terms of vote dispersion and opposition vote shares.

Figure 1 plots the frequency of the allocation of *ejidos* over time. In spite of the well-

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<sup>16</sup>We accessed the data from <http://www.inegi.org.mx/geo/contenidos/geoestadistica/catalogoclaves.aspx>

<sup>17</sup>[http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/use/?cid=nrcs142p2\\_054011](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/use/?cid=nrcs142p2_054011)

<sup>18</sup>See [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/edu/college/?cid=nrcs142p2\\_054029](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/edu/college/?cid=nrcs142p2_054029)

<sup>19</sup><http://data.fao.org/map?entryId=c1f62b50-88fd-11da-a88f-000d939bc5d8&tab=metadata>

<sup>20</sup>Specifically, we code the first five categories of the scale (1, too cold/dry; 2, low suitability; 3, unreliable rain; 4, slope higher than 30 degrees; 5, degraded), which capture soil of poor quality, as a 0, and the last two categories (6, medium/low rain-fed potential; 7, high rain-fed potential), which capture soil of good quality, as a 1.

<sup>21</sup>[http://www.inegi.org.mx/est/contenidos/proyectos/Agro/ca2007/Resultados\\_Agricola/](http://www.inegi.org.mx/est/contenidos/proyectos/Agro/ca2007/Resultados_Agricola/)

known peak in *ejido* allocation that occurred during the Lázaro Cárdenas administration (1934–40), land reform was active with close to 1,000 *ejidos* granted every quinquennium until the end of the century.

## 5 Results

### 5.1 Main results and falsification test

We begin by graphically exploring our basic hypothesis as embedded in our baseline specification in Equation (4) together with the validity of our key identification assumption. Figure 2 illustrates the spatial distribution of electoral competition (upper panel) and the change in the average distance of allocated *ejidos* after 1960 compared to before 1960 (lower panel). The correlation is visually apparent: more competitive areas in the upper map (darker areas) tend to coincide with a stronger increase in the distance of *ejidos* from the municipal head in the lower map. We examine this correlation more systematically in Figure 3. To construct this figure, we run a regression analogous to our baseline specification in Equation (4) in which we interact each competition measure with a full set of quinquennium dummies  $q_t$  (where  $q_{1915}$  equals 1 if the *ejido* was allocated from 1915 to 1919,  $q_{1920}$  equals 1 if it was allocated from 1920 to 1924, and so on). When running this regression, as with all subsequent tables, we standardize the competition measures for ease of interpretation of the coefficients.<sup>22</sup>

Figure 3 plots the resulting coefficients for the interactions between competition and the quinquennial dummies (1915 is the omitted quinquennium). There are three graphs, one for each of our competition measures: vote dispersion, opposition vote share, and whether the opposition won an election in the 1980s. The results support both the validity of our identification assumption and our hypothesis. Before 1960, when the PRI’s power was not challenged, the interaction coefficients are close to zero and statistically indistinguishable from those of the 1915 quinquennium. This indicates that, prior to 1960, the distance from the allocated *ejidos* to their municipality heads trended together in places with high or low political competition. However, starting in the 1960s, the interaction coefficients are positive and statistically different from those of the 1915 quinquennium. This indicates that, after 1960, there is a significant differential increase in the distance between *ejidos* and their municipality heads in more competitive municipalities than in less competitive ones. Figure 3 therefore confirms that the 1960s marked a stark change in the spatial patterns of *ejido* allocation across municipalities with varying political competition.

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<sup>22</sup>As in our baseline specification in Equation (4), the regression includes controls for municipality and presidential fixed effects. As we do in Table 5 of the robustness checks below, we also add the interaction of the quinquennial dummies with a host of population, geographic and climatic municipal controls to make sure these patterns are not driven by trends based on other municipal characteristics that are correlated with competition.

Having confirmed the validity of our identification assumption, we now present the results of our baseline specification in Equation (4) in Panel A of Table 2. There are three columns, one for each of our competition measures: dispersion in Column 1, opposition vote share in Column 2, and whether the opposition ever won in Column 3. We follow this structure consistently in the tables that follow. We find that the interaction term between political competition and the post-1960 dummy –  $\gamma$  in Equation (4) – is positive and statistically different from zero, which again confirms that, after 1960, more competitive areas experienced a relative increase in the distance of the newly created *ejidos* from their municipality heads.

The effects are non-negligible in size, and are very precisely estimated and consistent across our measures of political competition. A one-standard-deviation increase in vote dispersion leads to an approximately 2.83 km (recall that the competition measures are standardized) increase in the distance of *ejidos* from their municipality head after 1960, which is about 15% of the sample average. The coefficients for the opposition vote share and opposition ever winning imply a roughly similar effect, with a one-standard-deviation increase translating into an approximately 3.3 and 3.16 km rise, respectively.

Returning to our identification assumption, we can formally verify the validity of the parallel trends assumption observed in Figure 3 by conducting a placebo analysis. We drop all the *ejido* allocations after 1960 and estimate the interaction of each of our measures of political competition in the 1960s and a post-1935 indicator: the starting year of the placebo national shock.<sup>23</sup> The results of this placebo analysis are in Panel B of Table 2. The new interactions of interest are precisely estimated zeros for all of the political competition measures. This confirms that, as we observe in Figure 3, prior to 1960, the distances of the allocated *ejidos* from their municipality head exhibit parallel trends across municipalities with varying political competition. Lastly, notice that the interaction coefficients are more than an order of magnitude smaller than those in Panel A. This allows us to rule out very small effects, in the order of roughly 170–400 meters for a one-standard-deviation increase in the competition variables.

Before presenting a detailed discussion of our robustness checks and additional results, we briefly note two less substantial (but nonetheless important) ones that have been relegated to the Appendix. First, in Appendix Table A-3 we run our basic specification and robustness checks using only the first municipal election in the 1980s to construct the competition measure. As noted, to avoid noise coming from unusual elections, we prefer our baseline measure relying on averages for all elections in the 1980s. However, Table A-3 shows that our baseline results and robustness checks are similar when using this alternative way of measuring competition.<sup>24</sup>

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<sup>23</sup>The median year in the *ejido* allocations prior to 1960 is 1935.

<sup>24</sup>When we use whether the opposition won as the competition measure, the coefficient falls and is not significant in the simplest baseline specification. This result is perhaps unsurprising, since such a crude approach is possibly the noisiest measure of competition, especially when relying on a single election.

Second, Appendix Table A-4 reports our main results and robustness checks considering the logarithm of the distance of allocated *ejidos* to their municipality head as an outcome rather than the level. This robustness check is of particular importance since, if municipalities with varying political competition had different outcomes prior to the 1960s, the findings could be sensitive to the transformation of the outcome variable. In particular, considering absolute or proportional changes in the distance of allocated *ejidos* to their municipality heads could yield different answers. However, the results in Appendix Table A-4 indicate that our findings are robust to a logarithmic transformation of the outcome variable. This table also quickly summarizes the size of our effects. Notice that the estimated coefficients very consistently imply an effect of about a 5 – 10% increase in the distance of allocated *ejidos* (relative to the sample mean) for a one-standard deviation increase in the competition measures.

Finally, though we have not reported it in the Appendix or main text to save space, we also verified that our main results are not driven by any single state. More specifically, we estimated our baseline model, dropping each Mexican state from the sample one by one. In all cases, we found a significant interaction term between the post-1960 indicator and our competition measures.

## 5.2 Friendly and unfriendly opposition

An additional telling exercise comes from the investigation of differential effects as a function of the nature of the opposition faced by the PRI. As described in Section 4.2, some of the opposition parties were friendly to the PRI. These parties are often referred to as “parastatal,” as they were presumably controlled by the state but served the purpose of presenting an image of political diversity and openness, and potentially prevented the development of true competition. Presumably, the development of such parties was particularly important in places where the PRI expected some competition. Thus, we still expect a positive interaction between the presence of friendly opposition parties and the distance of *ejidos* from municipal heads after 1960. However, since these parties were not as threatening to the PRI’s hegemony, their effect could have been somewhat muted.

Table 3 presents our baseline specification where we use the friendly and unfriendly opposition vote shares, separately, as competition measures. For reference, Column 1 shows our baseline result considering equally all opposition vote share for the competition measure. In Column 2, where we use the vote share of friendly opposition parties, we find a significant but much smaller effect on the interaction of 1.19 km. Column 3 finds that when focusing on unfriendly parties, the coefficient on the interaction is almost three times as large (2.91) as that of friendly parties. Finally, Column 4 includes the vote share of friendly and unfriendly parties separately in the same regression. Both interaction terms

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Moreover, when we add additional controls and as a result gain precision, the increase in distance in more competitive places is typically statistically significant even using this measure.

are statistically significant, and we confirm a larger effect of competition of unfriendly parties' relative to unfriendly parties' vote shares (3.04 versus 1.45 km). A test for the inequality of these coefficients shown in the lower panel of the table is short of statistical significance at conventional confidence levels ( $p = 0.15$ ).

Table 3 thus suggests that the unfriendly opposition had a bigger effect on the PRI's local state capacity decisions, which is in line with our expectations. In what follows, to stack the deck against us (and to avoid making our results susceptible to the specific classification of friendly and unfriendly parties), we continue to consider all opposition parties equally when computing our political competition measures.

### 5.3 Omitted variables

We conduct additional exercises to rule out potential alternative mechanisms that could be driving our empirical results. We start by addressing the concern that our estimates are driven by factors other than electoral competition. In particular, we address the concern that our estimates might reflect the effect of omitted municipality characteristics that correlate with electoral competition, which independently affect the distance of the allocated *ejidos* from their municipal head starting in the 1960s. We test for the relevance of this concern by conducting the following specification:

$$\begin{aligned} \text{Distance}_{e,m} = & \alpha + \beta \cdot \text{Post1960}_{e,m} + \gamma \cdot (\text{Post1960}_{e,m} \times \text{Political Competition}_m) \\ & + \sum_i \delta_m (\text{Post1960}_{e,m} \times X_m^i) + \eta_m + \text{pres}_m + \varepsilon_{e,m}, \end{aligned} \quad (5)$$

where  $X_m^i$  is a set of (predetermined) municipal characteristics. Since the set of variables  $X_m^i$  must be exogenous, we focus on a set of geographic and climatic municipal variables that could potentially both correlate with electoral competition and affect the distance of allocated *ejidos* from their municipal head. These variables include area, historical population, average rainfall and rain variability, soil humidity and its variability, and average altitude and its variability (ruggedness).

We first assess whether the geographic and climatic municipal variables are associated with electoral competition at the municipality level. These associations are examined in Table 4, which considers specifications in which we run political competition measures on geographic and climatic municipal characteristics. We effectively observe that most geographic and climatic municipal variables are correlated with political competition. Thus, it is possible that our estimates regarding the effect of political competition on state capacity choices are driven by other reasons.

The specification in Table 5 assesses the extent of this concern, and presents the results of the specification of Equation (5), in which we control for the interaction of the post-1960 dummy with all the above-mentioned predetermined climatic and geographic

characteristics. The results indicate that some of these characteristics have an influence on the distance of the allocated *ejidos* from their municipality head after 1960. In particular, the interactions of the post-1960 dummy with the area and rainfall measures are statistically significant across all the specifications considering different measures of electoral competition.

The signs of these significant interactions are also as expected. For instance, the *ejidos* allocated after 1960 are particularly distant from municipality heads in larger municipalities, which may reflect the availability of distant land. In municipalities with higher average rain, land was also allocated in more distant places after 1960. Since rainfall is an important determinant of land quality, this may indicate that in those municipalities the land closest to the municipality heads was already taken, and new *ejidos* could only be allocated in more distant places. An opposite reasoning may explain the negative sign (which is short of being significant at conventional levels) of the interaction with rain variability in Columns 2 and 3.

However, the most relevant finding in Table 5 is that none of these potential 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 interactions with each of the different electoral competition measures remain statistically significant and with very similar magnitudes to those reported in Table 2. These findings demonstrate that our estimates do not appear to be driven by other previously omitted drivers of the distance of *ejidos* from their municipality heads that correlate with political competition.

#### 5.4 Mean reversion and ceiling effects

Another concern could be that our estimates simply reflect mean reversion or ceiling effects. For example, more land could have been allocated in more competitive municipalities initially. Alternatively, these municipalities could have had less land closer to the municipal head available for redistribution. If either of these two situations were the case, over time there would have been less land close to municipality heads available for redistribution in contested municipalities. Consequently, our results could be explained by differences in the land available for redistribution over time rather than by local state capacity choices by the PRI.

To empirically address these potential concerns, we first split the histogram of Figure 1 by the degree of political competition in Figure 4. The plots do not indicate a differential allocation of *ejidos* over time across municipalities with varying political competition.<sup>25</sup> Thus, the differences in allocation patterns across municipalities with varying levels of competition seem at first glance to be restricted to the distance of allocated *ejidos* from

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<sup>25</sup>The only exception is municipalities with and without the opposition ever winning, where the levels are clearly different but driven by the fact that very few municipalities did not have a PRI incumbent during the 1980s.

their municipality heads, rather than the number of *ejidos*, as we would expect with mean reversion or ceiling effects.

Second, we control for mean reversion and ceiling effects by running a specification analogous to Equation (5), 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  $t$  of the creation of *ejido*  $e$  in municipality  $m$ ). By including the interaction with the stock of allocated *ejidos*, we can address whether our results are driven by mean reversion. By including the interaction with the stock of agricultural land available for redistribution, we can confirm that our estimates are not the result of ceiling effects.

Panel A of Table 6 reports the specification in which we include the number of *ejidos* that had been granted in the municipality from 1914 to year  $t - 1$  and its interaction with the post-1960 indicator. The coefficients of the interaction between political competition and the post-1960 dummy remain not only significant but also similar in size to those reported in Table 2 across all measures of political competition. Additionally, the interaction between the stock of allocated *ejidos* and the post-1960 indicator is small and often insignificant.

Panel B of Table 6 shows the estimates of the specifications that address the related 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 year  $t - 1$  from all the agricultural land available for redistribution.<sup>26</sup> The estimates indicate that, even though in municipalities with a larger stock of land available for redistribution the *ejidos* granted after 1960 were more distant from their municipality heads, this cannot account for the significance of our estimates. While the size of the estimates of interest does drop, they remain sizable and statistically significant. Overall, these findings lessen the concern that our results might be capturing mean reversion or ceiling effects.

## 5.5 State politics

Since much of Mexican politics, and certainly the granting of *ejidos*, was determined at the state level, one concern is that our results are driven by a few states exhibiting distinct patterns in the distance of the allocated *ejidos* to their municipal heads after the 1960s. To address this potential concern, we include a series of state-specific time controls. Panel A of Table 7 adds state-specific cubic time trends in addition to the interaction of each state fixed effect with the post-1960 dummy. In this specification, identification comes

<sup>26</sup>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:

$$\text{LandAvailable}_{mt} = \text{Agricultural land 2007}_{m,t} - \text{Stock of land granted since 1914}_{m,t-1}, \quad (6)$$

where  $\text{Stock of land granted since 1914}_{mt}$  includes the accumulated outright grants, restitutions and enlargements.

from variation in electoral competition across municipalities within the same state, and not from comparisons of municipalities across states. Estimates in Panel A of Table 7 indicate that the results are essentially unchanged: the statistical significance and size of the coefficients are in line with those in Table 2.

In short, the baseline results and robustness checks conducted so far suggest that the estimates of the effect of political competition on the distance of the allocated *ejidos* to their municipality head are not explained by differential pre-trends, omitted variables that correlate with competition, mean reversion or ceiling effects, or by patterns specific to a few states. While this is reassuring, in the next section we present additional exercises that deal with a few alternative mechanisms that could be driving our estimates of interest.

## 6 Ruling out alternative interpretations

In this section we deal with a few alternative mechanisms that could explain our results. First, municipalities where the PRI faced stronger political competition may be those in which the individuals who had to give away the land for redistribution resisted the most. Given this resistance, the PRI could not grant communities of petitioners land allocations close to the municipality head, and thus had to allocate land farther away. Sinkler (2014) effectively argues that the state issued fewer land grants to peasants where commercial farmers were more powerful.

Another possibility is that stronger political competition led the PRI to increase land grants to appease opposition, which in turn forced the PRI to allocate lower-quality land located farther from municipality heads. Moreover, land quality could have a direct impact on public goods provision, which could also explain the findings in Table A-1, which we interpret as evidence that the *ejidos*' distance to the municipality head is an important driver of the cost of providing public goods.

Another alternative interpretation of our results is that they are driven by the fact that the PRI dealt with potential insurgents by relocating them to more isolated areas through the allocation of *ejidos*. As Campante et al. (2014) suggest, the isolation of those who oppose incumbent regimes increases their mobilization cost, and thus reduces the likelihood that they will show discontent or organize to challenge the regime. A related but somewhat more far-fetched alternative interpretation is that the PRI sent communities of insurgents far from municipality heads as punishment. In any case, these two last alternative interpretations suggest that the PRI should have allocated *ejidos* farther from municipality heads in municipalities where it faced more electoral competition after the 1960s.

Stasvage (2010) argues that politically compact European polities were more likely to develop representative assemblies than those with a more dispersed constituents, since

this allowed representatives to gather more easily and citizens to monitor them more effectively. Thus, like us, Stasvage views distance as a key determinant of the development of state institutions. However, our approaches differ in two ways. First, Stasvage takes distance as an (exogenous) explanatory variable of state institutions, while we argue that it responds to strategic incentives. Second, we emphasize different mechanisms by which distance affects state development. While we highlight the increase in the cost of providing public goods in order to strengthen clientelism, Stasvage focuses on the obstacles to developing effective democratic institutions. This second distinction raises the question of whether our results could reflect a different strategic choice by the PRI: rather than locating *ejidos* far away to increase the cost of providing public goods, they did it to undermine representative institutions and, in particular, to hamper effective citizen monitoring.

All of the above alternative interpretations also explain the increase in the distance of the allocated *ejidos* from their municipality heads in politically contested municipalities after the 1960s as the PRI's response to political contestation. However, none of these interpretations considers that such an effect captures the PRI's incentive to weaken local state capacity in order to retain its comparative electoral advantage. Next we present a series of additional exercises to rule out these alternative interpretations and provide further support to the proposed mechanism.

### 6.1 Strength of local elites

We start by considering the first alternative interpretation of our results, whereby the higher resistance of landed elites in municipalities with stronger electoral competition could explain our results. Specifically, the concern is that the interaction between competition and the post-1960 indicator instead captures the omitted interaction between the strength of local rural elites and the post-1960 indicator. To rule out this alternative interpretation of our findings, in Panel B of Table 7 we control for the number of large landholdings in each municipality and its interaction with the post-1960 indicator.

The estimates in Panel B of Table 7 suggest that, in municipalities with more *ranchos* and *haciendas*, *ejidos* were allocated farther from their municipality heads after the 1960s. However, the size of the estimates is small and statistically insignificant. More importantly, including the interaction of the municipal number of large landholdings and the post-1960 indicator does not alter our coefficients of interest. Their size and statistical significance is in line with our baseline results in Table 2. These estimates therefore dismiss the concern that our findings are driven by stronger local elites in municipalities with more political competition.

## 6.2 Appeasing the opposition

Next we deal with the alternative interpretation that our findings could be explained by the PRI placating the opposition through *ejido* allocations, which also forced it to allocate lower-quality land. To that end, we first test whether increased competition effectively led to the allocation of more *ejidos* after the 1960s. As we have emphasized throughout, this is also an important robustness check to verify that the PRI did not just counteract a fall in its client base by simply creating more clients. Table 8 reports the results of several specifications of measures of *ejido* allocation on the interaction of a post-1960 indicator and our various measures of political competition. We use municipality-year as the unit of observation and measure *ejido* allocation in different ways. In particular, in Panel A we consider the number of allocated *ejidos*, in Panel B the number of beneficiaries, and in Panel C the total area granted. Throughout the specifications in Table 8 we find no support for an effect on *ejido* allocations. The estimated effects on the interactions are inconsistently signed, insignificant, and often small.

To further address the extent of this alternative interpretation, we conduct our baseline specification but instead use different measures of land quality as dependent variables. Panel A of Table 9 employs an indicator that the granted land presents few constraints on agriculture; it was constructed using a seven-category measure of agricultural constraints from the FAO. Panel B considers a nine-level index of inherent land quality from the US Department of Agriculture (transformed so that higher values indicate higher land quality). The estimates across all specifications in all panels of Table 9 indicate that the land quality of the *ejidos* allocated in competitive municipalities after the 1960s was not worse. The estimates are small and statistically insignificant.

The findings of this exercise therefore suggest that our estimates do not show that political contestation led the PRI to increase the amount of allocated land in order to placate the opposition, which then generated an allocation of lower-quality land farther from the municipality heads. Lastly, note that the absence of an effect on land quality constitutes additional evidence that our estimates are unlikely to be driven by the presence of stronger local landed elites in more contested municipalities who forced the PRI to allocate lower-quality *ejidos* farther from municipality heads after the 1960s.

## 6.3 Isolating insurgents and potential opposition

Last we turn to the alternative interpretations that our findings are explained by the PRI's relocation of potential insurgents to increase their costs of mobilization and of those who protested against the regime to punish them. We also examine the related interpretation that the PRI relocated citizens to undermine their ability to monitor political representatives. If the PRI used the allocation of *ejidos* to isolate citizens (particularly the opposition), we would expect that political contestation after the 1960s affected not

only the distance of the allocated *ejidos* from their municipality head, but also the number of allocated *ejidos*. Particularly, we would expect the distribution of more *ejidos*, and for these to be farther from municipal heads.<sup>27</sup> However, as explained in detail above, the results in Table 8 provide no evidence of such an effect on *ejido* allocations.

To further address the alternative interpretation that the PRI used *ejido* allocation to increase the monitoring and mobilization cost of citizens and the opposition, we test whether our estimates are larger in areas where either the monitoring capacity or the threat of insurgency was larger. In particular, we focus on municipalities with a higher population density, larger social capital (measured by increased organizational capacity), and more populous municipality heads. In those municipalities, either citizens' monitoring ability was higher or the insurgents' cost of mobilization was lower, which raised the threat of effective monitoring or opposition mobilization.

Table 10 reports the results of various specifications that estimate the heterogeneous effects on the different proxies for the increased threat of insurgency in a given municipality. In Panel A, we include a triple interaction of the post-1960 indicator variable, each competition measure and our measure of social capital. Social capital is calculated as the first principal component of the municipality's number of human rights organizations, popular fronts and peasant organizations in 1994.<sup>28</sup> In Panel B, we consider a triple interaction with the municipality's population density in 1960 instead of social capital. Lastly, in Panel C we focus on the triple interaction with the population of the municipality head in 1960.

All the estimates in Panels A and B are negative, small and statistically insignificant. The estimates in Panel C are positive, but only statistically significant for one of the measures of electoral competition. More importantly, while somewhat smaller relative to the result in Table 2, the mean effect of the interaction between the post-1960 indicator and each measure of political competition remains large and statistically significant.<sup>29</sup>

Overall, the estimates in Tables 8 and 10 do not support that the allocation of *ejidos* far from municipality heads was intended to isolate individuals who opposed the PRI government or were likely to mobilize against it. As such, these results dismiss the alternative explanation that our findings can be explained by the PRI's allocation of *ejidos* to isolate opposition and potential insurgents.

To sum up, the exercises we conduct in this section disprove the most likely alternative interpretations of our results. In particular, they provide evidence against the possibility

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<sup>27</sup>It is unlikely that the PRI allocated less land to punish rural insurgents who were already organizing against the PRI government, and that among their demands, they were asking for more land redistribution.

<sup>28</sup>The first principal component explains 70% of the variance in the data.

<sup>29</sup>In all specifications, we demean the measures of competition, social capital, population density in 1960 and population in the municipality head in 1960 so that the double interactions can be interpreted as the corresponding effects at the mean.

that our results are explained by alternative rationalizations that highlight the political contestation against the PRI after the 1960s as an important driver of the increase in the distance of the allocated *ejidos* from their municipality heads, but where the PRI's incentives to weaken local state capacity play no role. Taken together, our results suggest that the PRI distributed *ejidos* farther from municipality heads where it faced stronger political opposition after the 1960 to deliberately weaken local state capacity in order to retain its electoral comparative advantage.

## 7 Conclusions

Although state capacity is central to economic and financial development, as well as to political stability and democracy, we still lack a definitive understanding of its determinants. A key observation in the recent literature is that, despite its benefits, investment in state capacity cannot be taken for granted, because political incentives often push political elites to forestall, rather than encourage, a stronger state. In this paper we examine one such instance in the context of political clientelism. Since state capacity is a key determinant of the cost of public goods provision, investments in this area undermine the comparative advantage of incumbent clientelistic parties, which then have incentives to prevent state capacity strengthening in areas where their dominant political position might be threatened.

We present a simple model capturing this mechanism and test its implications using data from a unique policy program in Mexico. In line with the theoretical predictions, our empirical evidence suggests that the PRI forestalled local state capacity by allocating communal lands far from municipality heads in areas where it expected stronger political competition. Our estimates survive a series of robustness checks, and we are able to rule out the most plausible alternative explanations.

In addition to helping explain the determinants of state capacity choices in contexts where other theories fall short, our study also unveils the potentially perverse effect of political competition on economic development. In contrast to most conventional theories on the impact of stronger political competition – and its effect on political accountability and economic development – we find that, in areas where clientelism is prevalent, more electoral competition may deter state capacity strengthening, and thus economic development. For instance, while [Besley, Persson, and Sturm \(2010\)](#) show that increased political competition led to more public goods provision in the U.S., we argue that entrenched incumbent clientelistic parties may respond to increased political competition by forestalling local state capacity and, consequently public goods provision.

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**Table 1: Summary statistics**

	Mean	Standard deviation	Observations
<b>A. Public goods in 2000</b>			
<i>Share of households in locality with...</i>			
Piped water	0.455	0.407	107,218
Drainage	0.282	0.322	107,218
Electricity	0.674	0.391	107,218
<b>B. State capacity</b>			
<i>Varying by locality:</i>			
-Distance of locality to municipality head (km)	19.152	21.604	199,391
<i>Varying by ejido:</i>			
-Distance of ejido to municipality head (km)	18.724	20.358	17,734
<b>C. Municipal political competition</b>			
<i>Average of 1980s elections:</i>			
-Vote dispersion	0.206	0.165	2,023
-Opposition vote share	0.159	0.140	2,023
- Vote share friendly opposition	0.026	0.060	2,023
- Vote share unfriendly opposition	0.133	0.131	2,023
-Opposition ever won	0.114	0.318	2,023
<i>First election of 1980s:</i>			
-Vote dispersion	0.146	0.194	2,023
-Opposition vote share	0.115	0.167	2,023
-Opposition won	0.019	0.136	2,023
<b>D. Municipal geographical covariates</b>			
Log of municipality area (km <sup>2</sup> )	5.526	1.492	2,437
Log of population in 1900	7.885	1.125	2,295
Average monthly rainfall (mm)	90.62	51.987	2,437
Rain variability (Standard deviation of monthly rainfall)	78.051	40.352	2,437
Average soil humidity (Days)	197.406	83.098	2,456
Soil humidity variability (Standard deviation of soil humidity)	34.231	30.248	2,456
Average altitude (m)	1,438.143	876.307	2,456
Ruggedness (Standard deviation of altitude)	255.643	189.214	2,456
<b>E. it Ejido land quality</b>			
Agricultural constraints (FAO)	0.181	0.376	22,816
Inherent land quality index (U.S. Department of Agriculture)	4.706	2.586	22,940
<b>F. Variables for robustness checks</b>			
<i>Varying by municipality and year:</i>			
-Number of allocated it ejidos	0.141	0.791	164,715
-Stock of allocated it ejidos	6.109	10.641	164,715
-Number of beneficiaries of it ejidos	13.477	88.551	164,715
-Area granted in it ejidos (m <sup>2</sup> )	375.437	6,935.555	164,715
-Land grant potential (1,000 km <sup>2</sup> )	3.696	11.939	164,636
<i>Varying by municipality:</i>			
- Number of <i>ranchos</i> and <i>haciendas</i>	47.033	90.628	2,455
- Social capital in 1994 (Principal component)	0	1.445	2,455
- Population density in 1960 (people/km <sup>2</sup> )	64.573	345.753	2,389
- Population in the municipality head in 1960 (people)	5,723.717	24,873.226	2,389

Notes: Opposition ever won = 1 if opposition won at least one election in the 1980s. Opposition vote share = 1 - PRI vote share. Vote dispersion =  $1 - \sum_{i=1} p_i^2$ , where  $p_i$  is the vote share of each of the parties in the considered election. Agricultural constraints is an indicator that the land presents few constraints for agriculture. The inherent land quality index varies from 1 (low quality) to 9 (high quality). Social capital in 1994 is the first principal component of the number of human rights organizations, popular fronts and peasants. The land available is calculated as the potential agricultural land in 2007 minus the stock of allocated it ejidos by year.

**Table 2: Distance of land granted and political competition:  
Baseline results and falsification**

Dependent variable: Distance of it ejido from municipality head			
	(1)	(2)	(3)
Competition	Vote dispersion	Opposition vote share	Opposition ever won
<i>Panel A: Baseline results, ejidos allocated from 1914 to 1992</i>			
Post-1960 × Competition	2.83** (1.17)	3.25** (1.41)	3.16** (1.52)
Observations	17,338	17,338	17,338
R-squared	0.58	0.58	0.58
<i>Panel B: Falsification, ejidos allocated from 1914 to 1960, placebo 1935</i>			
Post-1935 × Competition	0.20 (0.33)	0.17 (0.32)	0.39 (0.29)
Observations	12,575	12,575	12,575
R-squared	0.57	0.57	0.57

Notes: Robust standard errors in parentheses are clustered at the municipality level, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Regressions are at the *ejido* level. All specifications include municipality and presidential-term fixed effects. Post-1960 (1935) is a dummy variable that equals 1 if the it ejido is granted after 1960 (1935). Competition refers to political competition measured at the municipality level using the variable indicated in each column (see the notes to Table 1 and the main text for exact definitions). All competition measures are standardized.

**Table 3: Friendly and unfriendly opposition**

Dependent variable: Distance of it ejido from municipality head				
	(1)	(2)	(3)	(4)
Post-1960 × Vote share opposition	3.25** (1.41)			
Post-1960 × Vote share friendly opposition		1.19** (0.55)		1.45*** (0.53)
Post-1960 × Vote share unfriendly opposition			2.91* (1.49)	3.04** (1.50)
Observations	17,338	17,338	17,338	17,338
R-squared	0.58	0.58	0.58	0.58

*Test of inequality of coefficients in Column 4*

$H_o: \beta_{\text{Post-1960} \times \text{Vote share unfriendly}} \leq \beta_{\text{Post-1960} \times \text{Vote share friendly}}$	p-value
$H_a: \beta_{\text{Post-1960} \times \text{Vote share unfriendly}} > \beta_{\text{Post-1960} \times \text{Vote share friendly}}$	0.1457

Notes: Robust standard errors in parentheses are clustered at the municipality level, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Regressions are at the *ejido* level. All specifications include municipality and presidential-term fixed effects. Post-1960 is a dummy variable that equals 1 if the it ejido is granted after 1960. All vote shares are standardized. For the classification of friendly opposition, see Section 4.2 and Appendix Table A-2.

**Table 4: Covariate balance**

Dependent variable:	Log of municipality area	Log of population in 1900	Average monthly rainfall	Rain variability	Average soil humidity	Soil humidity variability	Average altitude	Ruggedness (altitude variability)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Vote dispersion	0.050 (0.042)	0.218*** (0.037)	-2.969* (1.474)	-2.866** (1.402)	0.271 (3.343)	-1.080* (0.588)	-23.030 (23.590)	-20.071*** (6.195)
R-squared	0.536	0.291	0.564	0.509	0.087	0.031	0.524	0.231
Opposition vote share	0.036 (0.039)	0.195*** (0.034)	-3.064** (1.453)	-2.862** (1.365)	-0.557 (3.211)	-1.155* (0.595)	-14.373 (23.931)	-17.530*** (5.810)
R-squared	0.535	0.286	0.564	0.509	0.087	0.031	0.523	0.229
Opposition ever won	-0.019 (0.024)	0.023 (0.028)	-1.919 (1.242)	-1.313 (0.980)	-0.196 (2.545)	-0.917 (0.704)	-6.366 (15.660)	-10.184** (4.757)
R-squared	0.535	0.261	0.562	0.505	0.087	0.031	0.523	0.225
Observations	1,788	1,676	1,788	1,788	1,800	1,800	1,800	1,800

Notes: Robust standard errors in parentheses are clustered at the state level, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Regressions are at the municipality level, with the dependent variable as indicated in each column title. All specifications include state fixed effects. See the notes to Table 1 and the main text for exact definitions. All competition measures are standardized.

**Table 5: Distance of land granted and political competition:  
Controlling for differential trends based on municipal characteristics**

Dependent variable: Distance of it ejido from municipality head			
	(1)	(2)	(3)
Competition	Vote dispersion	Opposition vote share	Opposition ever won
Post-1960 × Competition	2.480** (1.038)	2.941** (1.250)	3.479*** (1.320)
<i>Additional controls:</i>			
Post-1960 × Log of municipality area	4.200*** (0.987)	4.148*** (0.947)	4.367*** (0.969)
Post-1960 × Log of population in 1900	-0.924 (0.676)	-1.036 (0.710)	-0.613 (0.546)
Post-1960 × Average monthly rainfall	0.036* (0.021)	0.044* (0.023)	0.033* (0.019)
Post-1960 × Rain variability	-0.043 (0.031)	-0.049 (0.032)	-0.046 (0.029)
Post-1960 × Average soil humidity	0.006 (0.009)	0.006 (0.008)	0.008 (0.009)
Post-1960 × Soil humidity variability	0.006 (0.017)	0.007 (0.017)	0.010 (0.015)
Post-1960 × Average altitude	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)
Post-1960 × Roughness	0.003 (0.005)	0.002 (0.005)	-0.000 (0.004)
Observations	16,224	16,224	16,224
R-squared	0.586	0.587	0.588

Notes: Robust standard errors in parentheses are clustered at the municipality level, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Regressions are at the *ejido* level. All specifications include municipality and presidential-term fixed effects. Post-1960 is a dummy variable that equals 1 if the it ejido is granted after 1960. Competition refers to political competition measured at the municipality level using the variable indicated in each column (see the notes to Table 1 and the main text for exact definitions). All competition measures are standardized.

**Table 6: Distance of land granted and political competition:  
Controlling for the stock of allocated it ejidos and the land available for  
redistribution**

Dependent variable: Distance of it ejido from municipality head			
	(1)	(2)	(3)
Competition	Vote dispersion	Opposition vote share	Opposition ever won
<i>Panel A: Stock of allocated ejidos</i>			
Post-1960 × Competition	2.37* (1.22)	2.83* (1.48)	3.17** (1.47)
Stock of allocated it ejidos	0.05 (0.03)	0.05 (0.03)	0.05 (0.03)
Post-1960 × Stock of allocated it ejidos	0.04 (0.03)	0.04 (0.04)	0.07** (0.03)
R-squared	0.58	0.58	0.58
<i>Panel B: Land available for redistribution</i>			
Post-1960 × Competition	1.41* (0.81)	1.61* (0.87)	2.03*** (0.65)
Land grant potential	-0.53*** (0.07)	-0.53*** (0.07)	-0.54*** (0.07)
Post-1960 × Land grant potential	0.19** (0.09)	0.19** (0.09)	0.19** (0.09)
R-squared	0.59	0.59	0.59
Observations	17,337	17,337	17,337

Notes: Robust standard errors in parentheses are clustered at the municipality level, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. All specifications include municipality and president fixed effects. Post-1960 is a dummy variable that equals 1 if the it ejido is granted after 1960. Competition refers to political competition measured at the municipality level using the variable indicated in each column. The stock of allocated it ejidos is the sum of it ejidos granted in the municipality since 1914 and up to one year before the allocation of the it ejido of interest. Land available for redistribution is the difference between total available agricultural land and the amount of land allocated since 1914 and up to one year before the allocation of the it ejido of interest. See the notes to Table 1 and the main text for exact definitions. All competition measures are standardized.

**Table 7: Distance of land granted and political competition:  
State-specific trends and strength of rural elites**

Dependent variable: Distance of it ejido from municipality head			
	(1)	(2)	(3)
Competition	Vote dispersion	Opposition vote share	Opposition ever won
<i>Panel A: State-specific trends</i>			
Post-1960 × Competition	2.09*** (0.63)	2.72*** (0.70)	3.24*** (0.94)
R-squared	0.59	0.59	0.59
Cubic state trends	✓	✓	✓
Post-1960 × State indicator	✓	✓	✓
<i>Panel B: Strength of rural elites</i>			
Post-1960 × Competition	2.36*** (0.91)	2.69** (1.10)	2.92** (1.29)
Post-1960 × Number of <i>ranchos</i> and <i>haciendas</i>	0.01 (0.01)	0.01 (0.01)	0.02 (0.01)
R-squared	0.58	0.58	0.58
Observations	17,338	17,338	17,338

Notes: Robust standard errors in parentheses are clustered at the municipality level, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Regressions are at the *ejido* level. All specifications include municipality and presidential-term fixed effects. Post-1960 is a dummy variable that equals 1 if the it ejido is granted after 1960. Panel A includes cubic time trends interacted with state dummies and the interaction of each state dummy with the Post-1960 dummy. In Panel B, the number of *ranchos* and *haciendas* is the number of large landholdings, also measured at the municipality level. Competition refers to political competition measured at the municipality level using the variable indicated in each column. See the notes to Table 1 and the main text for exact definitions. All competition measures are standardized.

**Table 8: Amount of land granted and political competition:  
Is there an effect on the intensity of the land allocation program?**

	(1)	(2)	(3)
Competition	Vote dispersion	Opposition vote share	Opposition ever won
<i>Panel A: Dependent variable: Number of allocated ejidos</i>			
Post-1960 × Competition	0.004 (0.008)	0.009 (0.008)	-0.002 (0.007)
R-squared	0.103	0.103	0.103
<i>Panel B: Dependent variable: Number of beneficiaries of ejidos</i>			
Post-1960 × Competition	-0.91 (0.68)	-0.30 (0.68)	0.14 (0.63)
R-squared	0.06	0.06	0.06
<i>Panel C: Dependent variable: Area granted in ejidos</i>			
Post-1960 × Competition	240.05 (163.42)	298.11 (212.57)	226.43 (220.69)
R-squared	0.05	0.05	0.05
Observations	132,167	132,167	132,167

Notes: Robust standard errors in parentheses are clustered at the municipality level, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Regressions are at the municipality-year level. All specifications include municipality and presidential-term fixed effects. Post-1960 is a dummy variable that equals 1 after 1960, which is included in addition to the reported interaction term. Competition refers to political competition measured at the municipality level using the variable indicated in each column. The regressions also control for the interaction of Post-1960 with the host of population, geographic and climatic municipal controls in Table 4. See the notes to Table 1 and the main text for exact definitions. All competition measures are standardized.

**Table 9: Distance of land granted and political competition:  
Is it land quality or distance?**

	(1)	(2)	(3)
Competition	Vote dispersion	Opposition vote share	Opposition ever won
<i>Panel A: Dependent variable: Agricultural constraints (FAO)</i>			
Post-1960 × Competition	0.003 (0.006)	0.005 (0.007)	0.007 (0.007)
Observations	16,114	16,114	16,114
R-squared	0.814	0.814	0.814
<i>Dependent variable: Land quality index (U.S/ Department of Agriculture)</i>			
Post-1960 × Competition	-0.003 (0.061)	0.010 (0.062)	-0.002 (0.049)
Observations	16,181	16,181	16,181
R-squared	0.778	0.778	0.778

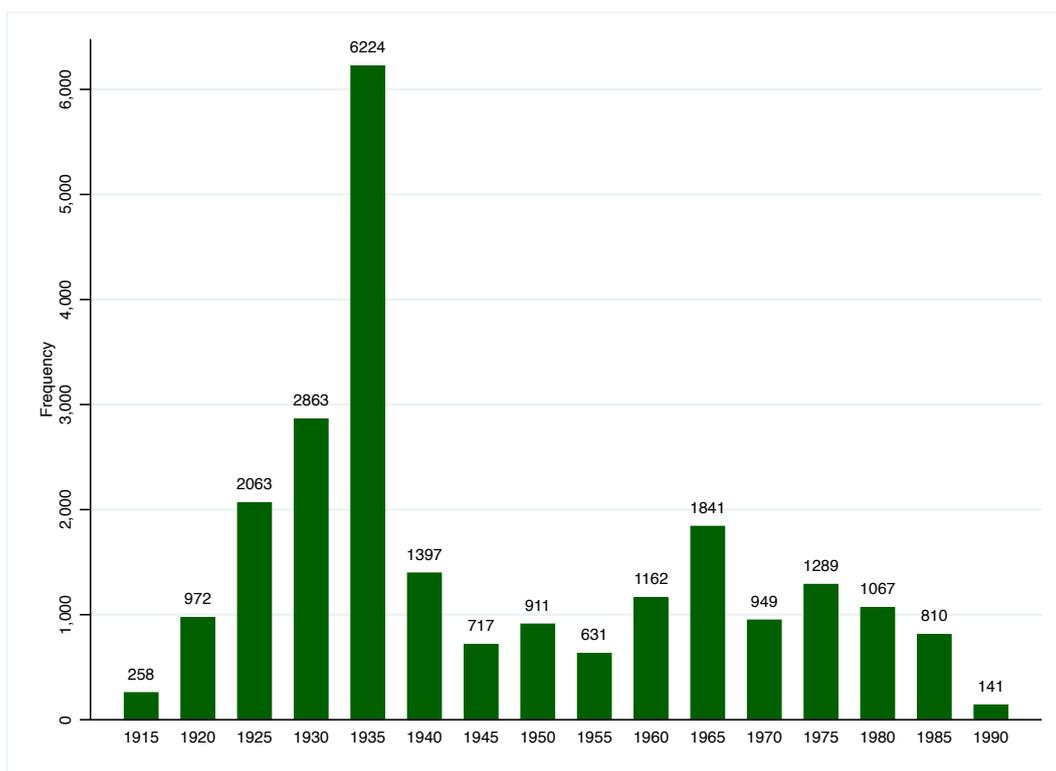
Notes: Robust standard errors in parentheses are clustered at the municipality level, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Regressions are at the *ejido* level. All specifications include municipality and presidential-term fixed effects. Post-1960 is a dummy variable that equals 1 if the *ejido* is granted after 1960, which is included in addition to the reported interaction term. Competition refers to political competition measured at the municipality level using the variable indicated in each column. The dependent variable is the land quality of each allocated *ejido* as measured using each of the variables in each panel title. The regressions also control for the interaction of Post-1960 with the host of population, geographic and climatic municipal controls in Table 4. See the notes for Table 1 and the main text for exact definitions. All competition measures are standardized.

**Table 10: Distance of land granted and political competition:  
Adding social capital, population density and municipality head's population**

Dependent variable: Distance of ejido from municipality head			
	(1)	(2)	(3)
Competition	Vote dispersion	Opposition vote share	Opposition ever won
<i>Panel A: Social capital in 1994</i>			
Post-1960 × Competition	2.92** (1.36)	3.57** (1.67)	3.14* (1.64)
Post-1960 × Social capital in 1994	0.23 (0.94)	-0.07 (0.90)	0.13 (0.35)
Post-1960 × Competition × Social capital in 1994	-0.39 (0.60)	-0.26 (0.51)	-0.03 (0.35)
R-squared	0.58	0.58	0.58
<i>Panel B: Population density in 1960</i>			
Post-1960 × Competition	3.30*** (1.08)	3.58*** (1.26)	3.22** (1.37)
Post-1960 × Population density in 1960	-0.09*** (0.02)	-0.09*** (0.02)	-0.08*** (0.02)
Post-1960 × Competition × Population density in 1960	-0.01 (0.02)	-0.02 (0.03)	-0.02 (0.03)
R-squared	0.58	0.58	0.58
<i>Panel C: Population in the municipality head in 1960</i>			
Post-1960 × Competition	1.99* (1.04)	2.39** (1.18)	1.16 (0.71)
Post-1960 × Population in the municipality head in 1960	0.87* (0.46)	0.74 (0.46)	1.34*** (0.44)
Post-1960 × Competition × Population in the municipal head in 1960	0.30 (0.59)	0.41 (0.57)	1.71** (0.82)
R-squared	0.58	0.58	0.58
Observations	17,338	17,338	17,338

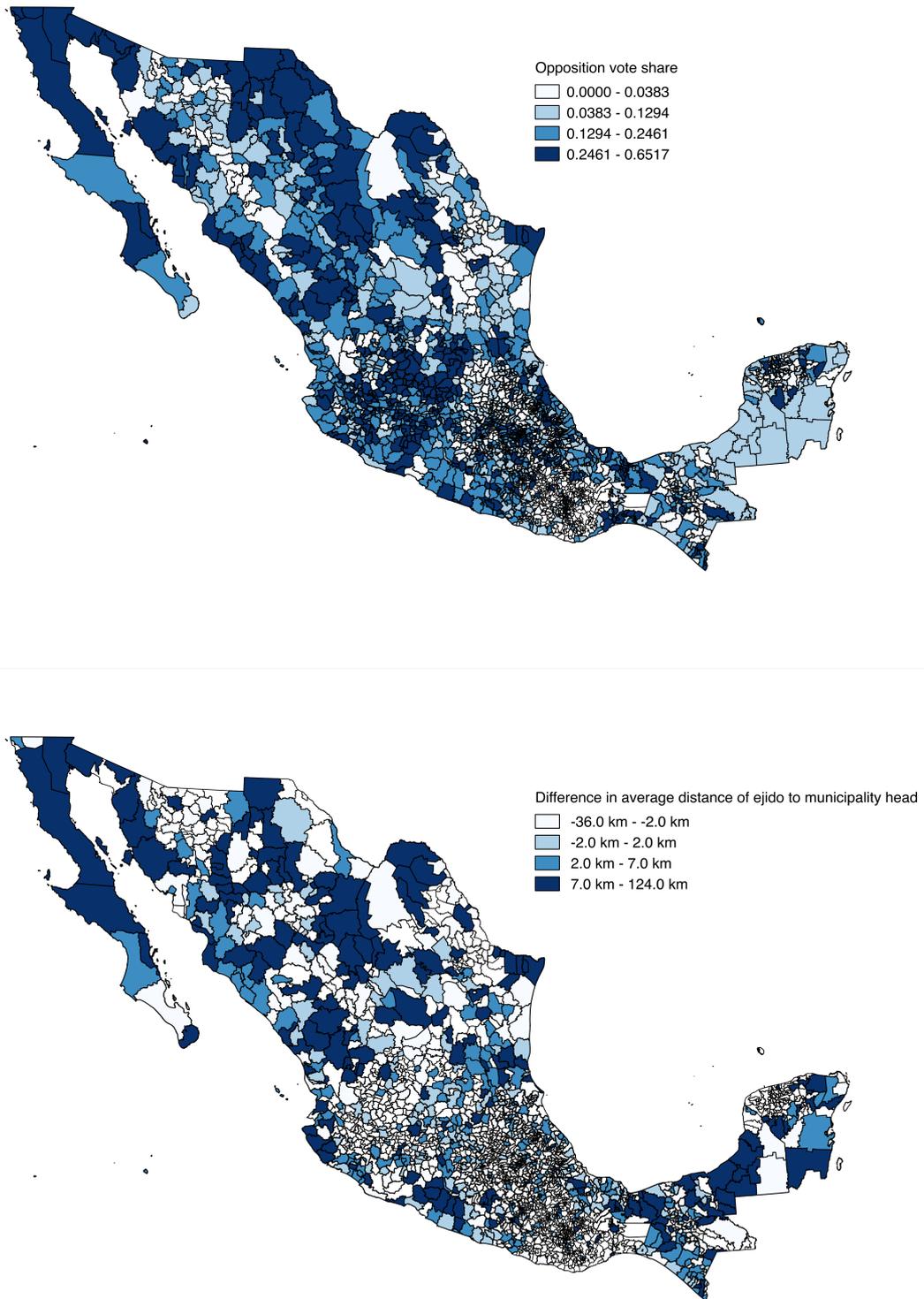
Notes: Robust standard errors in parentheses are clustered at the municipality level, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Regressions are at the *ejido* level. All specifications include municipality and presidential-term fixed effects. Post-1960 is a dummy variable that equals 1 if the it ejido is granted after 1960. Competition refers to political competition measured at the municipality level using the variable indicated in each column. We demean the measures of competition, social capital, population density and population in the municipality head in 1960 so that the double interactions can be interpreted as the corresponding effects at the mean. All competition measures are standardized.

Figure 1: Allocation of it ejidos over time



Notes: Number of allocated it ejidos. Authors' calculation with data from the *Padrón e Historial de Núcleos Agrarios - PHINA*.

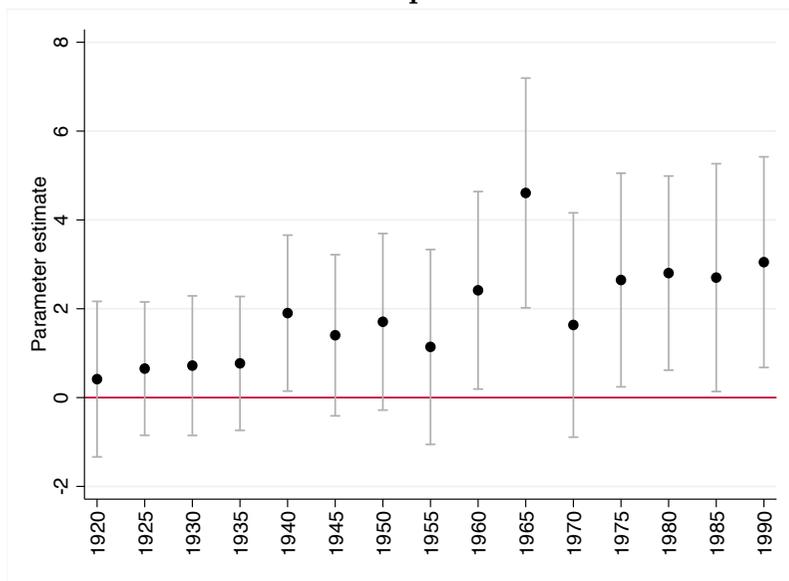
Figure 2: Opposition vote share and distance to municipality head



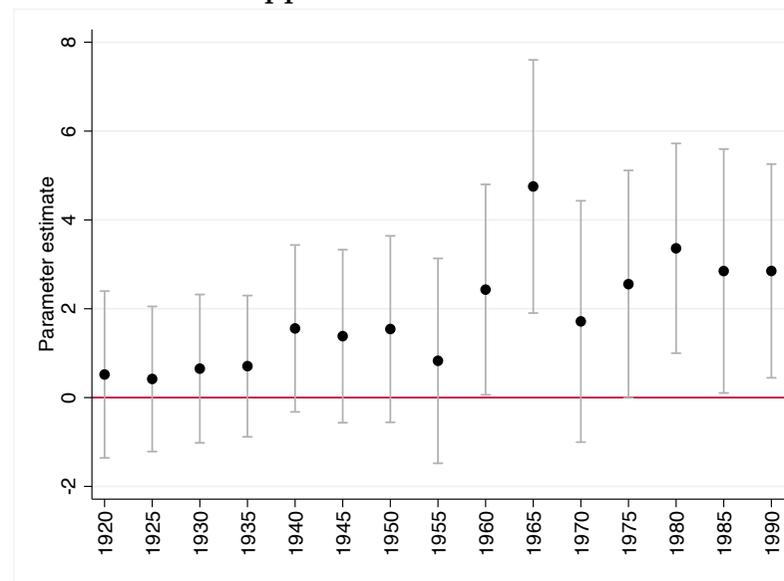
Notes: Municipal boundaries are in black. Opposition vote share is calculated as  $1 - \text{PRI vote share}$ . Difference in the average distance of its ejidos from municipality head is calculated at the municipality level as the average distance from the municipality head post-1960 minus the average distance before 1960. Cutoffs in both maps correspond to the division of each variable into quartiles.

Figure 3: Political competition and distance from municipality head

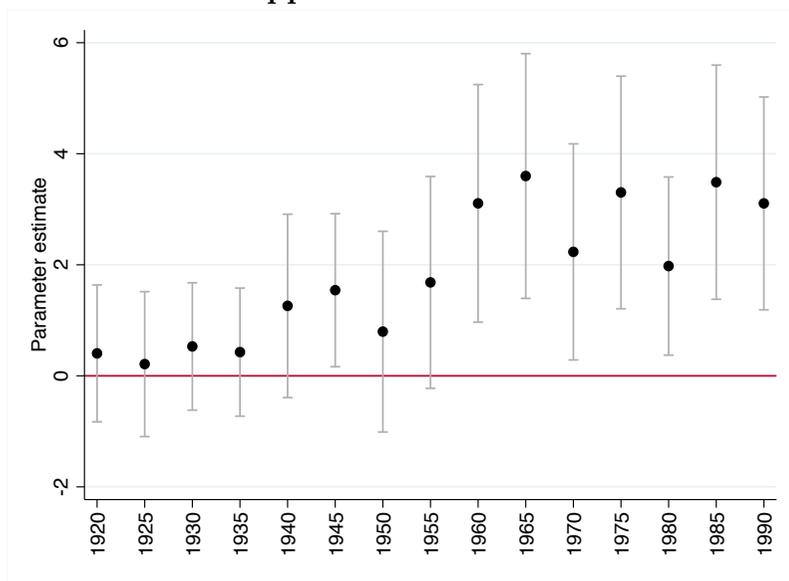
Vote dispersion



Opposition vote share



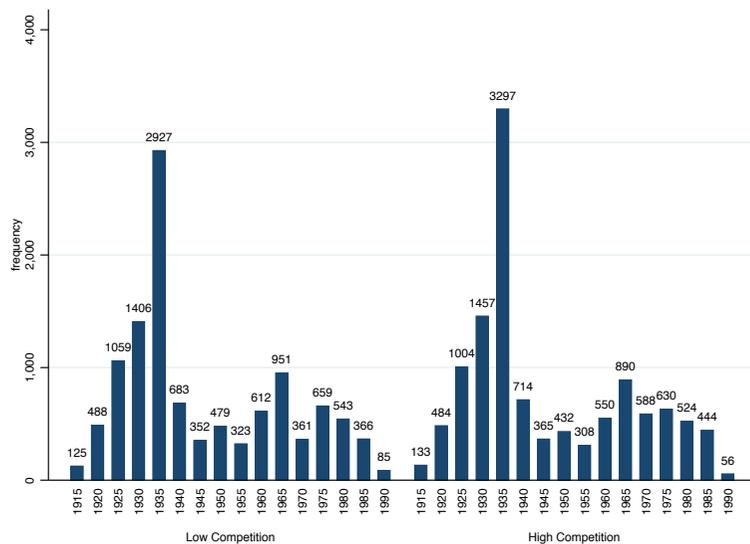
Opposition ever won



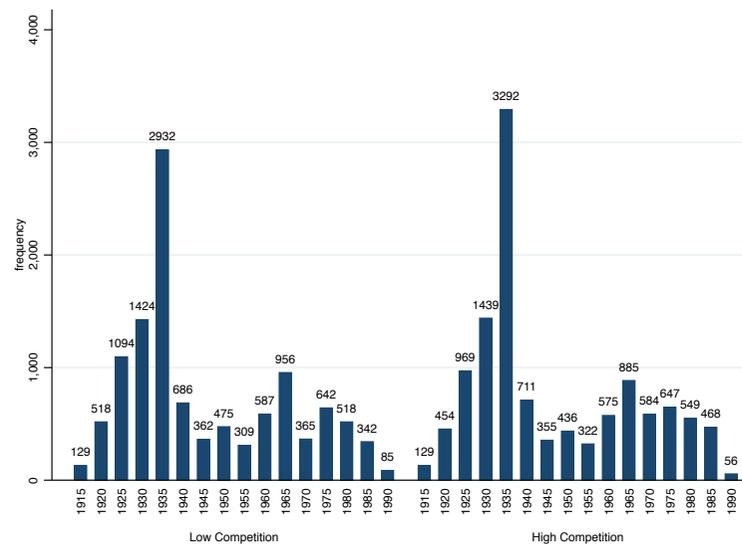
Notes: Each graph is based on a regression of the distance of the allocated *ejidos* from their municipality heads on the interaction of each competition measure and a full set of quinquennium dummies  $q_t$  ( $q_{1915}$  equals 1 if the it ejido was allocated from 1915 to 1919,  $q_{1920}$  equals 1 if it was allocated from 1920 to 1924, and so on), with municipality and presidential-term fixed effects. Each figure plots the coefficients of the interaction terms (1915 is the omitted quinquennium) with 90% confidence intervals. The specifications also control for the interaction of the quinquennial dummies with the host of population, geographic and climatic municipal controls in Table 4, to make sure these patterns are not driven by trends based on other municipal characteristics correlated with electoral competition. All competition measures are standardized.

Figure 4: Political competition and allocation of it ejidos over time

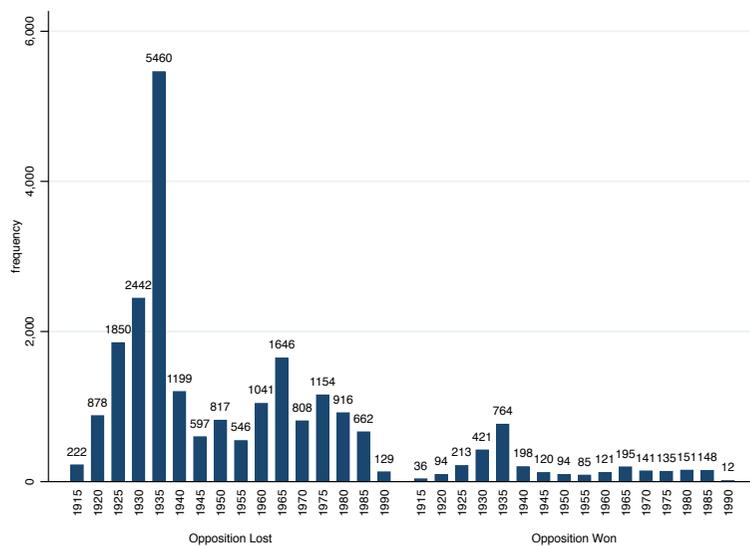
Vote dispersion



Opposition vote share



Opposition ever won



Notes: Number of allocated it ejidos by quinquennium. Quinquennium 1915 includes it ejidos that were allocated from 1915 to 1919, quinquennium 1920 includes it ejidos that were allocated from 1920 to 1924, and so on. High (low) competition corresponds to values above (below) the median of each measure of competition.

**Table A-1: Public goods and distance from municipality head**

	(1)	(2)	(3)
Dependent variable:	Share of households in locality with:		
	Piped water	Drainage	Electricity
<i>Panel A: Full set of localities</i>			
Distance of locality from municipality head	-0.0013*** (0.0003)	-0.0024*** (0.0006)	-0.0024*** (0.0005)
Observations	107,218	107,218	107,218
R-squared	0.2783	0.3643	0.2989
<i>Panel B: Localities that overlap with ejidos</i>			
Distance of locality to municipality center	-0.0011*** (0.0003)	-0.0018*** (0.0004)	-0.0023*** (0.0004)
Observations	41,006	41,006	41,006
R-squared	0.3118	0.4255	0.3713

Notes: Cross-section of localities in 2000. All specifications include municipality fixed effects. Robust standard errors in parentheses are clustered at the municipality level, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

**Table A-2: Classification of opposition parties**

Party abbreviation	Name details and coalitions	Opposition classification
PST	Partido Socialista de los Trabajadores	Friendly
PRT	Partido Revolucionario de los Trabajadores	Unfriendly
PRDPRT	PRD + PRT	Unfriendly
PRDPPSPFCRN	PRD + PPS + PFCRN (Frente Cardenista de Reconstrucción Nacional)	Unfriendly
PRDPMT	PRD + PMT	Unfriendly
PRD	Partido de la Revolución Democrática	Unfriendly
PPS	Partido Popular Socialista	Friendly
PPM	Partido del Pueblo Mexicano	Unfriendly
PMT	Partido Mexicano de los Trabajadores	Unfriendly
PFCRNPMSPPS	PFCRN + PMS + PPS	Friendly
PDM	Partido Demócrata Mexicano	Unfriendly
PCM	Partido Comunista Mexicano	Unfriendly
PCDP	Partido del comité de Defensa Popular	Unfriendly
PC	Previous PCM	Unfriendly
PARM	Partido Auténtico de la Revolución Mexicana	Friendly
PAN	Partido de Acción Nacional	Unfriendly
Other	Votes for other parties not specified in electoral database	Unfriendly

Notes: The parties listed are the full set of PRI opposition parties registered in the BANAMEX-CIDAC electoral database for municipal races in our sample period for computing electoral competition (1980s). A party is classified as friendly if it is listed as ‘parastatal’ in Molinar and Weldon (1990) and Peiro (1998).

**Table A-3: Distance of land granted and political competition:  
Results using the first election in the 1980s**

Dependent variable: Distance of it ejido from municipality head			
	(1)	(2)	(3)
Competition	Vote dispersion	Opposition vote share	Opposition won
<i>Panel A: Baseline results, ejidos allocated from 1914 to 1992</i>			
Post-1960 × Competition	2.36** (1.05)	2.12** (0.91)	1.33 (0.87)
<i>Panel B: Falsification, ejidos allocated from 1914 to 1960, Placebo using post 1935</i>			
Post-1935 × Competition	0.13 (0.30)	0.19 (0.27)	0.25 (0.17)
<i>Panel C: Controlling for differential trends based on municipal characteristics</i>			
Post-1960 × Competition	1.815** (0.914)	1.765** (0.805)	1.618** (0.674)
<i>Panel D: Controlling for the stock of allocated ejidos</i>			
Post-1960 × Competition	1.91* (1.07)	1.79* (0.92)	1.42* (0.85)
<i>Panel E: Controlling for the land available for redistribution</i>			
Post-1960 × Competition	1.07* (0.64)	1.07 (0.65)	1.04* (0.56)
<i>Panel F: Controlling for state-specific trends</i>			
Post-1960 × Competition	1.39** (0.59)	1.29** (0.61)	1.22* (0.72)
<i>Panel G: Controlling for the strength of rural elites</i>			
Post-1960 × Competition	1.87** (0.79)	1.67** (0.70)	1.03 (0.70)

Notes: Robust standard errors in parentheses are clustered at the municipality level, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Regressions are at the *ejido* level. All specifications include municipality and presidential-term fixed effects. Post-1960 (1935) is a dummy variable that equals 1 if the it ejido is granted after 1960 (1935). Competition refers to political competition measured at the municipality level using the variable indicated in each column (see the notes to Table 1 and the main text for exact definitions). All competition measures are standardized.

**Table A-4: Distance of land granted and political competition:  
Results using log of distance of it ejido from municipality head**

Dependent variable: Log of distance of it ejido from municipality head			
	(1)	(2)	(3)
Competition	Vote dispersion	Opposition vote share	Opposition ever won
<i>Panel A: Baseline results, ejidos allocated from 1914 to 1992</i>			
Post-1960 × Competition	0.06*** (0.02)	0.07*** (0.02)	0.09*** (0.02)
<i>Panel B: Falsification, ejidos allocated from 1914 to 1960, placebo using post-1935</i>			
Post-1935 × Competition	-0.01 (0.02)	-0.01 (0.02)	0.02 (0.02)
<i>Panel C: Controlling for differential trends based on municipal characteristics</i>			
Post-1960 × Competition	0.059** (0.025)	0.067*** (0.025)	0.089*** (0.021)
<i>Panel D: Controlling for the stock of allocated ejidos</i>			
Post-1960 × Competition	0.05** (0.03)	0.06** (0.03)	0.09*** (0.02)
<i>Panel E: Controlling for the land available for redistribution</i>			
Post-1960 × Competition	0.04* (0.02)	0.05** (0.02)	0.07*** (0.02)
<i>Panel F: Controlling for state-specific trends</i>			
Post-1960 × Competition	0.05** (0.02)	0.06** (0.02)	0.08*** (0.02)
<i>Panel G: Controlling for the strength of rural elites</i>			
Post-1960 × Competition	0.06** (0.02)	0.07*** (0.02)	0.08*** (0.02)

Notes: Robust standard errors in parentheses are clustered at the municipality level, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Regressions are at the *ejido* level. All specifications include municipality and presidential-term fixed effects. Post-1960 (1935) is a dummy variable that equals 1 if the it ejido is granted after 1960 (1935). Competition refers to political competition measured at the municipality level using the variable indicated in each column (see the notes to Table 1 and the main text for exact definitions). All competition measures are standardized.