Political Competition and State Capacity

Evidence from a Land Allocation Program in Mexico[*]

Leopoldo Fergusson[†] Horacio Larreguy[‡] Juan Felipe Riaño[§]

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Abstract

We develop a model of the politics of state capacity building undertaken by incumbent parties that have a comparative advantage in clientelism rather than in public goods provision. The model predicts that, when challenged by opponents, clientelistic incumbents have the incentive to prevent investments in state capacity. We provide empirical support for the model's implications by studying policy decisions by the Institutional Revolutionary Party (PRI) that affected local state capacity across Mexican municipalities and over time. Our difference-in-differences and instrumental variable identification strategies exploit a national shock that threatened the Mexican government's hegemony in the early 1960s. The intensity of this shock, which varied across municipalities, was partly explained by severe droughts that occurred during the 1950s.

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[†]Universidad de los Andes, Department of Economics. lfergusson@uniandes.edu.co

[‡]Departments of Economics and Political Science, ITAM, and Visiting Researcher, Institute for Advanced Study in Toulouse and Toulouse School of Economics. horacio.larreguy@itam.mx and hlarreguy@tse-fr.eu.

[§]Vancouver School of Economics, University of British Columbia. jf.riano@almuni.ubc.ca

1 Introduction

States with strong bureaucratic, fiscal, and military capacities provide public goods and legal environments conducive to economic development and political stability.[1] Yet many states lack these capabilities, especially in developing countries where clientelistic practices are ubiquitous.[2] While there have been advances in understanding the sources of state capacity,[3] we still lack a detailed understanding of its determinants in the presence of clientelism.

In this paper, we attempt to fill this gap in two ways. First, we develop a theory about how political incentives affect incumbent parties' choices of how to build bureaucratic state capacity. We examine, in particular, incumbent parties that have a comparative advantage in providing transfers to their clients instead of providing public goods.[4] Our model shows that investments in local bureaucratic state capacity that reduce the cost of providing public goods undermine the comparative advantage of incumbent clientelistic parties. As a result, these parties have an incentive to prevent such investments when threatened by increased political competition.

Second, we analyze the empirical implications of our model using a difference-in-differences (DiD) identification strategy that exploits a national shock that threatened the Institutional Revolutionary Party's (PRI) hegemony in the early 1960s with varying intensity across municipalities. Following a decade of economic crisis, there was discontent in various sectors of the population with the PRI, weakening its clientelistic machine while strengthening opposition parties (Bartra, 1985).

To capture local bureaucratic capacity decisions by the PRI, we look at a land allocation program that transferred property rights to communities in the form of *ejidos*.[5] This program redistributed more than 50% of Mexico's agricultural land between 1910 and 1992 (Dell, 2012; Sanderson, 1984; Torres-Mazuera, 2009). Communities were often relocated to the allocated land. Since use rights were forfeited if the peasants moved away, individuals had incentives to remain in place (de Janvry, Emerick, Gonzalez-Navarro, & Sadoulet, 2015). Importantly, national and state PRI governments chose where to locate the *ejidos* within each municipality.

Proximity to municipal headquarters was a central determinant of the cost of public good provision, and consequently, of municipal bureaucratic state capacity. Official documents often point to the distance from their municipal headquarters as one of the main barriers to local public service delivery, and contemporaneous measures of such

[1] Acemoglu (2005); Besley and Persson (2010); Dell, Lane, and Querubin (2017); Dincecco and Katz (2016); Fearon and Laitin (2003); Michalopoulos and Papaioannou (2013).

[2] Acemoglu (2005); Baland and Robinson (2008, 2012); Finan and Schechter (2012); Herbst (2000); Michalopoulos and Papaioannou (2014); Robinson, Torvik, and Verdier (2006).

[3] Acemoglu, Robinson, and Santos (2013); Besley and Persson (2000, 2010); Sanchez de la Sierra (2020).

[4] Throughout, we refer to "public goods " as those that are not easily targeted to specific individuals or groups in the population. These contrast with what the literature on clientelism denotes as the "particularistic" transfers that are targeted in exchange for political support (Hicken, 2011; Kitschelt, 2000; Stokes, 2005).

[5] *Ejidos* were areas of land transferred to the community as a whole, where members had usufruct rights rather than private ownership rights.

distance and service delivery exhibit a strong negative correlation.

Our theory predicts that increasing distance of allocated *ejidos* from their municipal headquarters could be an advantageous strategy for an incumbent clientelistic politician facing increased political competition, as the PRI faced in the 1960s.

Our DiD identification strategy tests the model predictions by looking at changes over time in the distance of newly allocated *ejidos* from municipal headquarters across levels of political opposition.

Figure 1 provides a graphical intuition of our identification strategy and results. It shows two municipalities in the state of Durango that have roughly similar area and land available for redistribution, but that experienced different levels of political competition in the 1960s: low in the municipality on the left and high on the right. The plots in the top row depict land redistribution prior to 1960 and plots in the bottom row after 1960. In line with our model's prediction, the *ejidos* allocated after 1960 were significantly farther away from the municipal headquarters in the municipality where the PRI experienced a higher level of political competition. In contrast, those allocated before 1960 had a roughly similar distance from the municipal headquarters in both municipalities. DiD estimates confirm this graphical intuition: relative to before 1960, after 1960 the PRI strategically granted *ejidos* significantly farther away from municipal headquarters in places where it faced more political competition.

The validity of our DiD estimates is supported by several exercises. In addition, we also use droughts during the 1950s as an instrument for our potentially endogenous measures of political competition within our DiD specification. Our IV-DID estimates confirm that *ejido* distance increased after 1960 in more contested municipalities.

While we cannot rule out all other potential reasons for the documented patterns, we explore the most salient alternative interpretations of our findings by considering other outcomes and various heterogeneous effects.

Our paper primarily 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 (Gennaioli & Voth, 2015; Tilly, 1992), Africa (Herbst, 2000; Sanchez de la Sierra, 2020; Thies, 2007) and Latin America (Centeno, 1997; Garfias, 2018; Thies, 2005).[6] We extend this literature by studying the role that political competition plays in explaining choices that fundamentally influence local bureaucratic capacity in contexts where conflict did not lead to state capacity development. Recent articles by Acemoglu et al. (2013) and Fergusson, Robinson, Torvik, and Vargas (2016) study 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 throughout the territory (Henn,

[6] Herbst (2000) argues that low population density limits the development of modern state institutions. Instead of taking population density as given and examining its implications, our work suggests that it can be endogenous to the political economy of state formation.

2020; Soifer, 2015), rather than on the monopoly of violence.

Lastly, our paper also speaks to the literature that highlights the negative effects of clientelism on public service delivery (Fergusson, Molina, & Robinson, 2020; Hicken & Simmons, 2008; Keefer, 2007). We contribute a new mechanism by emphasizing the incentives to forestall investments in the local bureaucratic capacity.

2 Background

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 Mexico's 1917 constitution. 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. Individuals would lose inheritable (but otherwise non-transferable) use rights in the event of an extended absence.

Communities could request new land grants (*dotaciones*) or to have their land restituted (*restituciones*). We restrict our analysis to new land endowments, which constituted the bulk of the reform (see Appendix Figure A-1) and where authorities determined the location of new land endowments.

Community demand was not the key factor that affected who got land and where it was granted. A highly centralized system gave the regime discretion over when and where to allocate land.

Ejidos became key to the PRI's dominance because they facilitated the party's clientelistic practices. The lack of individual property rights made peasants highly dependent on the government as the only source of agricultural credit, investments, and technical assistance (Albertus, Diaz-Cayeros, Magaloni, & Weingast, 2016). Also, its internal organization, together with the PRI's corporativist 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 since migrations from *ejidos* were infrequent. Once individuals were located on an *ejido*, they became "tied" to their land, and thus unlikely to migrate (see Yates, 1981, p. 151 and de Janvry et al., 2015).

2.2 Social and political unrest and the PRI's response in the 1960s

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 previously under the control of the PRI's clientelistic machine: 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 during the 1950s (Cerano Paredes, Villanueva Díaz, Valdez Cepeda, Méndez González, & Constante García, 2011; Seager et al., 2009). From the late 1950s until well into the 1960s, peasant movements surged throughout Mexico to express discontent and channel demands (Bartra, 1985).

While peasants mobilized in rural areas, industrial workers and teachers also engaged in protests and strikes in urban centers (Herrera Calderón & Cedillo, 2012). The government usually responded by repressing protesters and incarcerating their leaders.

Mexico's political opposition absorbed this social discontent (Bartra, 1985). In the early 1960s, the PRI started to face strong threats from opposition candidates in several gubernatorial and municipal races.

In response, the PRI engaged in election fraud (Bezdek, 1973). As a result, despite the increased political competition, the opposition won mayoral elections in only 17 out of approximately 2,400 municipalities and gubernatorial elections in one of the 31 states that held elections (Bezdek, 1973; Lujambio, 2001).

While the PRI's fraud prevented the increase in political opposition from materializing in electoral competition in the short-term, the threat of electoral competition persisted, as reflected by the association between municipal political discontent in 1960s and political competition during the 1980s that we show below. More importantly for our IV-DiD strategy, such municipal events and electoral competition correlate strongly with the droughts during the 1950s.

3 A model of state building and political competition under clientelism

3.1 Setup

We consider a model in the spirit of Robinson et al. (2006) and Robinson and Verdier (2013) in which an incumbent clientelistic (C) and an opposition non-clientelistic (NC) party compete for the rents from office R by deciding how much of an exogenously given budget T to spend on particularistic transfers (τ) and public goods (g). The number of voters is normalized to 1 and there are two types of voters. An exogenously given α share of voters—which we denote as *clients (c)* —are embedded in the clientelistic networks of the incumbent party and so are targeted more efficiently with particularistic transfers. The remaining $1-\alpha$ share of voters—which we denote as *non-clients (nc)*—can potentially benefit from particularistic transfers from the incumbent politician but she cannot target them as efficiently. To capture that the incumbent has a comparative advantage in clientelism, we assume that NC is unable to provide particularistic transfers to voters and is thus restricted to allocating the entire budget to public goods.[7]

The assumption that incumbent clientelistic parties have a comparative advantage in clientelism is central to the predictions of our model. This assumption has strong theoretical and empirical foundations. Incumbent parties are often better positioned

[7] 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.

to engage in clientelistic exchanges than opposition parties due to greater access to the government resources usually used in clientelistic exchanges (Blattman, Larreguy, Marx, & Reid, 2020; de Kadt & Larreguy, 2018), which in turn makes their clientelistic promises more credible. Incumbents can also attract and incentivize high-performing political intermediaries since they represent better prospects (Bowles, Larreguy, & Liu, in press; Robinson & Verdier, 2013). Using data from the Democratic Accountability and Linkages Project,[8] Appendix Table A-1 shows that incumbent parties across a large sample of countries are significantly more likely to engage in clientelistic practices than challengers.[9] Finally, there is overwhelming evidence of the PRI's comparative advantage in clientelism in our context (Larreguy, 2013; Larreguy et al., 2016; Magaloni, 2006), which allowed it to remain in power for more than seven decades.

The budget constraint can generally be written as:

$$P_g(s)g + \alpha\tau_c + (1-\alpha)\tau_{nc} = T, \tag{1}$$

where $P_g(s)$ is the cost of providing public goods and we have normalized the cost of particularistic transfers to one. We consider the case where $P_g(s)$ is a decreasing function of the bureaucratic state capacity level s (i.e., $P_g'(s) < 0$).

We denote the utility that the α share of clients and the $1-\alpha$ share of non-clients receive from particularistic transfers and public goods, respectively, as:

$$U_c = \beta_c\tau_c + u\left(g\right), \text{ and } U_{nc} = \beta_{nc}\tau_{nc} + u\left(g\right),$$

where the utility from public goods $u(g)$ is increasing and concave, $u'(\cdot) > 0$ and $u''(\cdot) < 0$. For simplicity, we assume that the marginal utility from particularistic transfers is linear with $\beta_c > \beta_{nc}$, which captures that the incumbent's clientelistic machine is much more efficient at targeting and enforcing transfers to clients than non-clients. In line with Lindbeck and Weibull (1987), all voters also receive an idiosyncratic ideological shock σ_i and a general perceived-valence shock δ, both toward the non-clientelistic party and uniformly distributed with a density of 1 and centered at 0.

3.2 Characterization

Considering voter decisions and integrating over the distributions of σ_i and δ, the probability that the incumbent party wins is given by

$$\Pi^C = \frac{1}{2} + \alpha\beta_c\tau_c^C + (1-\alpha)\beta_{nc}\tau_{nc}^C + u\left(g^C\right) - u\left(g^{NC}\right). \tag{2}$$

Notice that the incumbent clientelistic party enjoys an electoral advantage thanks to

[8] For more details, see https://sites.duke.edu/democracylinkage/.

[9] For specific examples, see Stokes (2005) for the case of the Peronist party in Argentina, Bowles et al. (in press) for the case of the Unity Party in Liberia, Larreguy, Marshall, and Querubin (2016) and Magaloni (2006) for the case of the Institutional Revolutionary and National Action Parties in Mexico, Blattman et al. (2020) for the National Resistance Movement in Uganda, and de Kadt and Larreguy (2018) for the African National Congress in South Africa.

its ability to target particularistic transfers to clients, capturing in a reduced-form fashion the positive association between incumbency and clientelism discussed above. As a consequence, the extent of political competition faced by the clientelistic party is inversely related to β_c, which captures the efficiency with which the clientelistic machine targets its clients.[10]

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

$$\max_{g,\tau_c,\tau_{nc}} \left(\frac{1}{2} + \alpha\beta_c\tau_c + (1-\alpha)\beta_{nc}\tau_{nc} + u(g) - u(g^{NC*}) \right) R,$$

subject to the budget constraint in equation (1).

Focusing on an interior optimum,[11] the first-order condition,

$$u'\left(g^{C*}\right) = P_g(s)\beta_c, \tag{3}$$

indicates the optimal level of public goods that the clientelistic party should provide. Because $\beta_c > \beta_{nc}$, $\tau_{nc}^{C*} = 0$, and putting together equation (3) with the budget constraint in equation (1), $\tau_c^{C*} = \frac{T - P_g(s)g^{C*}}{\alpha}$. Note that g^{C*} is decreasing in β_c since, from the first-order condition, $\frac{\partial g^{C*}}{\partial \beta_c} = \frac{P_g(s)}{u''\left(g^{C*}\right)} < 0$. Intuitively, a more efficient clientelistic machine makes particularistic transfers more attractive for the clientelistic party.

3.3 Empirical predictions

We next consider the incentive of the clientelistic incumbent to invest in bureaucratic state capacity and how this incentive depends on the political competition she faces.

Proposition 1. ***Bureaucratic state capacity and the clientelistic incumbent's payoff***
The clientelistic incumbent's payoff may be increasing or decreasing in bureaucratic state capacity s.

Proof. The simple differentiation of the clientelistic party's winning probability in (2) implies $\frac{\partial \Pi^C}{\partial s} = \left[-g^C\beta_c + u'\left(\frac{T}{P_g(s)}\right)\frac{T}{P_g^2(s)} \right] P_g' \lesseqgtr 0.$ □

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 incumbent may use to transfer benefits to its clients. The opposition candidate cannot use

[10] We will see that in equilibrium the incumbent party does not target any transfers to non-clients, and thus β_{nc} plays no role in determining the political competition faced by the clientelistic party. β_c is exogenously given and, while endogenizing it might be of theoretical interest, we consider an exogenous shift in our empirical application.

[11] We assume that $lim_{g\to 0}u'(g) \to \infty$ and that $u'\left(T/P_g(s)\right) < P_g(s)\beta_c$ so that the interior condition holds.

resources to target clients, and thus this first effect strengthens the incumbent's electoral prospects and provides incentives to bolster bureaucratic state capacities. In contrast, the "relative-price," effect—which is caused by a reduction in the cost of providing public goods—increases the public goods that the opposition party can provide, which hurts the incumbent's electoral prospects.[12]

The overall impact of an increase in bureaucratic 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 political competition, which we examine more closely in the next proposition. To mimic our empirical context, we model an increase in political competition as a decrease in the efficiency of the incumbent's clientelistic machine.

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

Proof. Recall that $\frac{\partial g^C}{\partial \beta_c} = \frac{P_g(s)}{u''(g^C)}$. Substituting $P_g(s)$ from (3) and using the definition of $\rho = -\frac{g u''(g)}{u'(g)}$, $\beta_c \frac{\partial g^C}{\partial \beta_c} = -g^C/\rho$. Substituting this in the cross derivative $\frac{\partial^2 \Pi}{\partial s \partial \beta_c} = -P'_g \left(g^C + \beta_c \frac{\partial g^C}{\partial \beta_c} \right)$, and simplifying, we obtain the stated result. □

The intuition for this result is the following. An increase in political competition faced by the incumbent party does not change the behavior of the opposition party. Thus, the "relative-price" effect of a reduction in s and the associated increase in $P_g(s)$ is unchanged. However, increased political competition impacts directly and indirectly the "real-budget" effects of a reduction in s because fewer resources are available for particularistic transfers. Directly, the cost of having fewer resources for transfers is lower with a more inefficient clientelistic machine. Indirectly, g^{C*} increases when β_c falls, which increases the "real-budget" cost of a reduction in s. As long as the direct effect is dominant, the incumbent prefers lower bureaucratic 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. When this is the case, the incumbent clientelistic party provides fewer public goods because its marginal utility is lower. As a consequence, the indirect effect is not very large. Thus, the direct effect dominates, and the incumbent party prefers to strategically reduce bureaucratic state capacity. When $\rho < 1$, the reverse occurs, and contesting the power of the incumbent party creates the conditions for clientelism to gradually erode,

[12] 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. Note that the envelope condition does not hold for the opposition party since it faces a corner solution.

as an increase in s and an associated fall in $P_g(s)$ leads to a decrease in the provision of particularistic transfers.

Assessing whether $\rho > 1$ is not feasible in our historical empirical context due to the lack of data and variation in incumbency, and to our knowledge, there are no measures of $\rho > 1$ for public goods in the experimental and development literature. However, we compute estimates of ρ by exploiting that $\beta_c \frac{\partial g^C}{\partial \beta_c} = -g^C/\rho$, and using estimates of the average β_c, $\frac{\partial g^C}{\partial \beta_c}$, and g^C from Larreguy (2013), who studies how the supply of education provided by the incumbent PRI across Mexico's municipalities varies with the strength of the PRI's clientelistic networks. Calibrations that take into account the number of schools, teachers, and students, indicate that ρ is comfortably above the unity.[13]

We conclude by emphasizing that the PRI could have responded to a surge in political competition by increasing *ejido* allocation in order to produce new clients (i.e., increase α). However, increasing the number of *ejidos* is likely to have had a modest effect on the base of clients because land petitioners were likely to fall under the PRI's corporatist apparatus anyway.

More importantly to show this possible complementary effect, we show below that land allocation did not increase more in competitive municipalities than in less competitive municipalities after 1960.

4 Data and empirical strategy

4.1 Data and variables

Our empirical analyses require data from a variety of sources.[14] We now describe the sources and computations for our main variables, with details about other variables in the Online Appendix Section A. The summary statistics are reported in Appendix Tables A-3 and A-4.

Our main outcome is the distance between the *ejidos* allocated between 1914 to 1992 from their municipal headquarters. We compute this distance for the 17,239 *ejidos* across 2,440 municipalities in our sample using spatial data on the mapping of *ejidos* to the localities—the smallest administrative divisions in Mexico—they contain, and the distance of localities from their municipal headquarters. Our baseline specification considers the minimum Euclidean distance of localities from their municipal headquarters.[15]

We consider two main measures of expected political competition. We first computed the vote share received by all opposition parties in the 1980s using mayoral electoral

[13] We measure β_c considering the mean share of municipal land that belongs to an *ejido*, 0.234. We proxy for g using the municipal mean of schools, teachers, and students, which are respectively given by 1.276, 8.343, and 191.6. $\frac{\partial g^C}{\partial \beta_c}$ is respectively given by -0.2857, -0.9697, and -25.08 for schools, teachers and students.

[14] See, Centro de Investigación para el Desarrollo A.C (CIDAC) (2012); Comision Nacional del Agua (CONAGUA) (2013); Food and Agriculture Organization (FAO) (2014); Gobierno de la República Mexicana (2013, 2011); Instituto Nacional de Estadística y Geografía (INEGI) (1990, 2000, 2007, 2011, 2013); Kitschelt (2013); Registro Agrario Nacional (2012); Secretaría de Gobernación (1994); U.S. Department of Agriculture (2014)

[15] In our robustness checks, we consider two alternative measures: we account for the elevation terrain profile by penalizing our baseline distance when there are changes in altitude in the straight path and we measure the distance using roads. See Appendix Figure A-3 for a detailed explanation of the computation of these distances.

outcomes. Second, we used newspaper articles to code all events that described social and political discontent between 1960 and 1969, and we computed the (log) number for each municipality, both including and excluding rural events. This is original data collected from the two Mexican newspapers—*Excelsior* and *El Universal*— that had national coverage and were relatively uninfluenced by the national government.[16] To instrument these measures of political competition, we use the number of months between 1950 and 1959 in which rainfall was strictly lower than the monthly long-run average in each municipality.

4.2 Empirical strategy

A key implication of our model is that incumbent clientelistic parties should choose weaker bureaucratic state capacity when they expect greater political opposition. To test this prediction, we examine whether the PRI allocated *ejidos* further away from their municipal headquarters in municipalities where the party expected higher levels of political opposition.

Our difference-in-differences baseline specification is:

$$\text{Distance}_{e,m,t} = \gamma \cdot (\text{Post1960}_{e,m,t} \times \text{Political Competition}_{m}) + \eta_m + \delta_t + \varepsilon_{e,m,t}, \quad (4)$$

where the dependent variable is the distance of *ejido e* from the municipality m headquarters in year t, while $\text{Post1960}_{e,m,t}$ is a dummy variable that equals 1 if *ejido e* was created after 1960, $\text{Political Competition}_m$ is a measure of expected political competition, η_m are municipality fixed effects, and δ_t is a full set of time fixed effects identifying the year in which *ejido e* was created. η_m deals with systematic time-invariant differences across municipalities and δ_t with the fact that some presidents engaged in significantly more land redistribution than others, which could have led to the distribution of more isolated *ejidos* at times. We cluster standard errors at the municipality level.

Using the distance of the *ejidos* from their municipal headquarters to measure local state capacity decisions has several advantages. First, this distance persistently influences the local bureaucracy's ability to provide the inhabitants of the newly allocated *ejidos* with public goods. Many government documents identify the distance of localities from their municipal headquarters as one of the main barriers for public goods provision and development (see, for example, Baja California State Government, 2003, p. 19, Secretariat of Social Development, 2014, p. 18, Mexico, 2007).

To reinforce this point, Appendix Table A-6 uses locality-level outcomes from the 1990 and 2000 Mexican censuses to show that distance of *ejido* localities from municipal headquarters is negatively associated with the provision of public goods by municipal governments even many years later, as captured by the share of households with piped water connections, drainage, or electricity, as well as the number of active public schools

[16] Appendix Figure A-5 presents the distribution of these events over time.

per capita within 5kms of each locality.[17]

The second advantage of our measure is that the distance of the new *ejidos* from their municipal headquarters persistently influences local state capacity, given the inhabitants' lack of geographical mobility. Therefore, it best captures the strategic choice to permanently increase the cost of public goods provision that we emphasize in our theory.

We consider two different measures of expected political competition: a) opposition vote share $= 1 - \frac{\text{votes for PRI}}{\text{total votes}}$, and b) events of social and political discontent $= \log(1 +$ events of discontent from 1960 to 1969$)$.

To calculate the first measure, we use municipal electoral data during the 1980s for two reasons. First, while some municipal electoral results are available for the 1970s, these records are not complete, causing a concern that their availability is systematically correlated with the level of electoral competition and reducing the data available for the analysis. Second, the 1960s and 1970s saw significant electoral fraud, which we also expect to be associated with the electoral competition faced by the PRI. After the 1977 electoral reform, electoral figures are both fully available and much more reliable (Klesner, 1993).

We take the average opposition vote share across all municipal elections during the 1980s, reducing potential noise from specific elections. Since this variable could be an outcome of the electoral threat that the PRI faced in the early 1960s, as a second measure of expected political competition, we use the number of events of social and political discontent between 1960 and 1969 in each municipality. Consistent with historical accounts, Appendix Figure A-6 shows that our two measures of political competition are strongly associated. This alternative measure is not subject to the same endogeneity concern.

Our identification assumption is that *ejido* distance would have exhibited similar trends across municipalities experiencing varying degrees of political competition if the PRI had not experienced increased contestation in the 1960s. Similar trends in *ejido* distance prior to 1960 support the plausibility of such an assumption. We also show that our results are not driven by variables that could be correlated with expected electoral competition, by verifying robustness to including interactions of a rich set of predetermined variables with time fixed effects. However, there remains a concern that our results are confounded by unobservable omitted variables.

Therefore, building on historical accounts linking the droughts that Mexico suffered during the 1950s with social and political discontent in the 1960s, we directly tackle further endogeneity concerns by instrumenting our two measures of expected political competition with municipal droughts during the 1950s. Specifically, our first-stage regression in this IV-DiD approach is:

$$\begin{aligned}\text{Post1960}_{e,m,t} \times \text{Political Competition}_m = \hat{\gamma} \cdot \left(\text{Post1960}_{e,m,t} \times \text{Droughts}_{m,1950s}\right) \\ + \hat{\eta}_m + \hat{\delta}_t + \hat{\varepsilon}_{e,m,t},\end{aligned} \tag{5}$$

[17] Such negative correlation holds for non-*ejido* localities, although it is marginally weaker.

where $\text{Droughts}_{m,1950s}$ is the number of months with rainfall below the historical mean. Assuming that such droughts influenced *ejido* distance only through expected political contestation, the resulting IV DiD estimates should be consistent.

5 Results

5.1 Baseline results

We begin by graphically exploring our basic hypothesis together with the validity of our key identification assumption.

Figure 2 shows a plot with the coefficients of the interactions the opposition vote share in the 1980s with a full set of quinquennium dummies q_t (e.g., q_{1960} equals 1 if an *ejido* was allocated between 1960 and 1964) from regressions analogous to our baseline specification in equation (4). In this regression and all subsequent tables, we standardize the competition measure for ease of interpretation. These plots support both the validity of our similar-trend identification assumption and our hypothesis. Before 1960, when the PRI's political power was not challenged, the interaction coefficients are close to zero and are statistically indistinguishable from those of the baseline quinquennium. However, starting in the 1960s, there is a differential increase in the *ejido* distance in municipalities with greater expected political competition.[18]

Table 1 reports the results of our OLS, IV-DiD, and reduced-form specifications. Across both measures of political competition, the OLS-DiD estimates reported in column 1 are positive and statistically different from zero. A one-standard-deviation increase in the opposition vote share is associated with an increase in the distance of *ejidos* from their municipal headquarters after 1960 by about 3.243 km, or 17.2% of the sample average, a non-negligible increase. The coefficients for the events of social and political discontent imply a roughly similar effect: 2.391 km and 12.7% , respectively.[19]

The IV-DiD estimates reported in column 2 show somewhat larger estimates. For instance, the IV estimate suggests that a one-standard-deviation increase in the opposition vote share leads to a 7.07 km increase in *ejido* distance after 1960, whereas the corresponding OLS estimate is 3.243 km. The reduced-form estimates in column 3 similarly indicate a positive and significant impact of droughts on *ejido* distance after 1960. All these estimates robustly support that increased expected political competition after 1960 led the PRI to locate *ejidos* further away from municipal headquarters.

Finally, positive and statistically significant first-stage estimates in column 4 confirm the historical accounts suggesting that the droughts during the 1950s contributed to social and political discontent and electoral opposition. Furthermore, the partial F-statistics support the relevance of our instrument. While the instrument in Panel B is weaker than

[18] We report the corresponding graph for the events of social and political discontent in Appendix Figure A-7.

[19] Appendix Table A-8 shows robustness to controlling for geographic variables, climatic variables, and municipal bureaucratic capacity measures all interacted with a post-1960 indicator, which Appendix Table A-7 shows are effectively correlated with our measures of expected political competition These findings lessen the concern that our estimates are driven by confounders of political competition.

the one in Panel A, the F-statistic of the first stage is close enough to the rule of thumb of 10. Moreover, in subsequent robustness exercises, once we include time-varying controls, this statistic often becomes larger than 10.[20]

5.2 Robustness exercises

One potential concern is that our DiD estimates reflect mean reversion or ceiling effects. For example, it is conceivable that the PRI allocated more land in municipalities that experienced more political contestation, possibly due to droughts during the 1950s. As a result, there would have been less land available for redistribution in these municipalities and the land that remained could well have been farther away from the municipal headquarters than in municipalities with less contestation. Our results then could be confounded by the municipal land available for redistribution and its proximity to municipal headquarters.

To empirically address ceiling effects, we run a specification where we include interactions of the post-1960 indicator with the stock of agricultural land available for redistribution by quartiles of distance from the municipal headquarters. We tackle mean reversion by including interactions with the amount of *ejido* land distributed by quartiles of distance from the municipal headquarters. We consider these interactive controls either at time t or in 1959.[21]

Panels A and C of Table 2 report the results of the specification in which we include the land available for redistribution at time t and in 1959, respectively. Panels B and D of Table 2 present analogous results when we instead control for interactions with the amount of *ejido* land distributed. Panels C and D deal with the concern that the controls at time t are "bad" since they constitute outcomes (Angrist & Pischke, 2008). Reassuringly, throughout these specifications, the coefficients of the interaction with our political competition measures remain not only significant but also similar in size to those reported in Table 1.

Appendix B discusses four additional robustness exercises, all confirming our main conclusions. We investigate: whether the increase in the distance of allocated *ejidos* varies with the nature of the political opposition (friendly or unfriendly) faced by the PRI; whether our estimates are biased by the strength of local rural elites; whether state-level confounders bias our results; and whether results are sensitive to alternative measures of distance to the municipal headquarters.

6 Examining alternative interpretations

Our proposed mechanism—that the PRI located *ejidos* farther from municipal headquarters in an effort to weaken the local bureaucratic state capacity as a strategic response to

[20] Furthermore, in Panel B of Appendix Table A-9, we test for the potential presence of weak instruments allowing for independently and identically distributed (Stock & Yogo, 2005) or autocorrelated errors (Montiel Olea & Pflueger, 2013). We generally reject the null hypothesis of weak instruments at conventional levels, except where we allow autocorrelated errors and use the events of social and political discontent as the competition measure. Moreover, in Panel C we verify that our coefficient of interest remains significant when implementing the weak-IV robust inference procedure by Andrews, Stock, and Sun (in press).

[21] See details on their computation in Appendix Figure A-4.

increased expected electoral competition—might not be the only possible explanation for our main empirical results. We next assess the most salient alternatives.

6.1 Appeasing the opposition

Possibly the most important alternative possibility is that increased competition led the PRI to increase *ejido* allocations in an effort to appease the opposition, which led to the distribution of marginal, lower-quality land located further from municipal headquarters.

To assess the empirical relevance of this concern, we first test whether increased competition led to the allocation of more *ejidos* after 1960. We use the municipality-year as the unit of observation and measure *ejido* allocation in different ways. In Panel A of Table 3, we consider the number of allocated *ejidos*, in Panel B the number of beneficiaries, and in Panel C the total area granted per beneficiary. The results across specifications provide no support for an increase in *ejido* allocations in more contested municipalities after 1960.

As we have anticipated, the lack of an effect on the extent of *ejido* allocations indicates that the PRI did not counteract a weakening of its clientelistic machine by simply creating more clients.[22]

6.2 Isolating insurgents and potential opposition

Another alternative interpretation of our results is that they reflect the PRI's strategy to deal with potential insurgents or citizen checks on the government by relocating them to more isolated areas through the allocation of *ejidos* (Stasvage, 2010; Campante, Do, & Guimaraes, 2019).

This alternative interpretation seems unlikely since it implies an increased allocation of *ejidos*, which the results in Table 3 do not support. Nonetheless, we also test whether our estimates are larger in areas where the threat of insurgency was larger. Appendix Table A-14 shows no heterogeneity in our main results by measures of social capital, population density, or population of the municipal headquarters, which are factors shown to facilitate dissent.

6.3 Alternative state-capacity interpretations of our distance measure

To conclude, we discuss whether there might be dimensions of local state capacity other than the bureaucratic also affected by the distance of *ejidos* from municipal headquarters. First, it is unlikely that *ejido* distance affected the state's fiscal capacity. Due to the lack of individual property rights over *ejidos*, the ability of the Mexican state to tax peasants was indeed affected by *ejido* allocations (Torres-Mazuera, 2009), but this effect was independent of *where ejidos* were allocated.

Moreover, increased *ejido* distance was not likely intended to increase the coercive reach and presence of the Mexican state in the frontier along the lines of Turner (1920). The process of state building in Mexico and Latin American differed greatly from that

[22] We also directly test whether the PRI allocated marginal, lower-quality land starting in 1960 in municipalities where it expected greater political competition. Appendix Table A-13 finds no such effect on two distinct measures of land quality.

in the United States (García-Jimeno & Robinson, 2011). This alternative state-capacity interpretation is at odds with the historical accounts and the basic patterns observed in our data. First, the Mexican state had its whole territory under control by the end of Lazaro Cárdenas' presidency in 1940 (Sánchez Talanquer, 2018). Second, the estimates in Appendix Table A-6 indicate that the allocation of *ejidos* far from municipal headquarters did not lead to increased local state presence, as captured by the relationship between the *ejido* distance to the municipal headquarters and contemporaneous measures of public service delivery; rather, it had the opposite effect.

7 Conclusion

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 bureaucratic 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 strengthening state capacity in areas where their dominant political position might be threatened.

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 of the impact of stronger political competition, we find that, in areas where clientelism is prevalent, more electoral competition may deter state capacity strengthening, and by doing so, may impede economic development. While existing work highlights the benefits of political competition for public goods provision and more generally for economic development (Besley, Persson, & Sturm, 2010; Naidu, 2017), we argue that incumbent clientelistic parties may respond to increased political competition by hindering local bureaucratic state capacity and, consequently, public goods provision. Interestingly, these effects of political competition may be non-monotonic: if the competition is strong enough, the clientelistic party may be forced to change its strategy and also offer public goods (Diaz-Cayeros, Estevez, & Magaloni, 2016).

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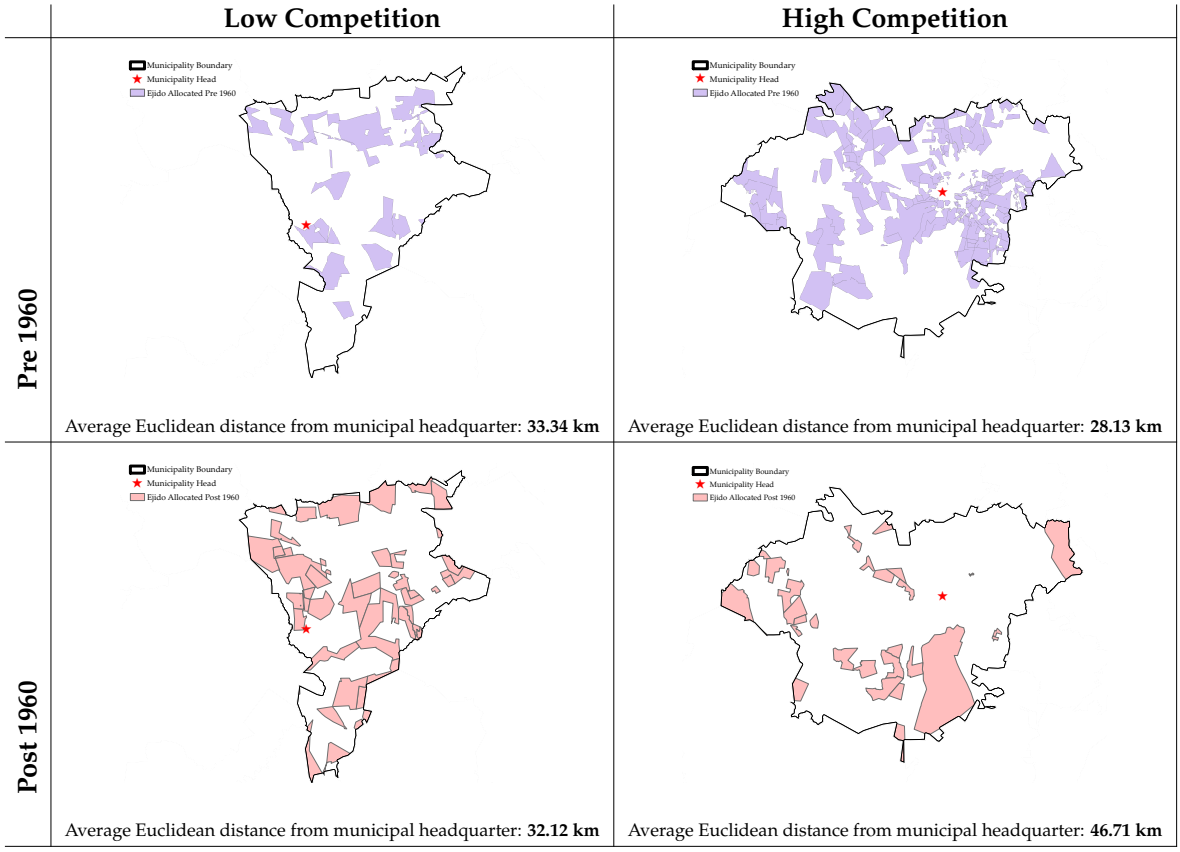
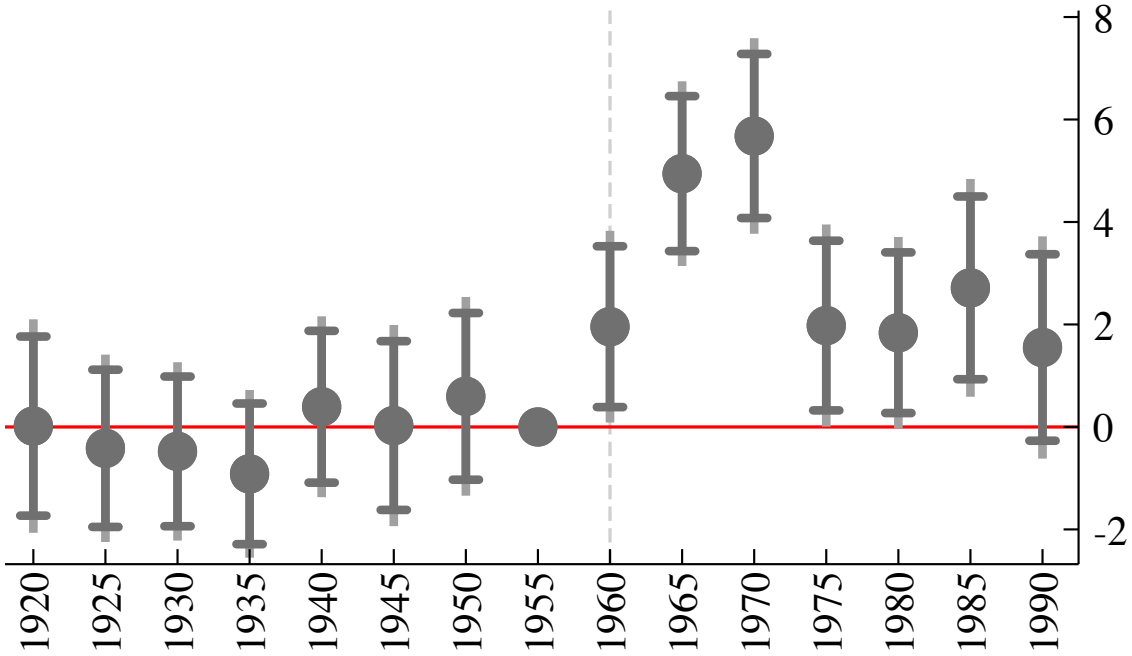
Figure 1: Allocation of *ejidos* within two similar municipalities in Durango



Notes: Both municipalities belong to the same state (Durango) and are similar in area and land available for redistribution. High and Low competition is defined based on whether the vote share for opposition parties is above or below the median.

Figure 2: The effect of expected political competition (opposition vote share) on the distance of *ejidos* from municipal headquarters



Notes: Estimates, and 95 and 99 percent confidence intervals, of the regression of the distance of the allocated *ejidos* from their municipal headquarters on municipality fixed effects, quinquennium fixed effects, and the interaction of the standardized opposition vote share and the full set of quinquennium dummies. The omitted quinquennium is 1955 and represented by the coefficient without confidence intervals.

Table 1: Distance from municipal headquarters and political competition: OLS and Instrumental Variables

Baseline results, *ejidos* allocated from 1914 to 1992				
	(1)	(2)	(3)	(4)
Dependent variable:	Distance of *ejido* from municipality head			Post1960 × Competition
Econometric Specification	OLS	IV	Reduced Form	First Stage
Panel A: Competition measured as the Vote Share of Opposition Parties				
Post 1960 × Competition	3.243**	7.077***		
	(1.308)	(2.717)		
Post 1960 × Months with Droughts 1950-1959			0.34***	2.43**
			(0.05)	(0.99)
R-squared	0.579	-	-	0.621
F statistic (Kleibergen-Paap rk Wald)				38.99
Observations	17,059	17,059	17,059	17,059
Panel B: Competition measured as the number of Events of Social and Political Discontent 1960-1969				
Post 1960 × Competition	2.391**	9.847**		
	(1.056)	(4.728)		
Post 1960 × Months with Droughts 1950-1959			0.21***	2.08**
			(0.07)	(0.96)
R-squared	0.581	-	-	0.516
F statistic (Kleibergen-Paap rk Wald)				9.518
Observations	17,239	17,239	17,239	17,239
Controls for all specifications:				
Municipality Fixed Effects	✓	✓	✓	✓
Year of Allocation Fixed Effects	✓	✓	✓	✓

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. Competition refers to political competition measured at the municipality level using the variable indicated in each panel (see the notes to Appendix Table A-3 and the main text for exact definitions). All competition measures are standardized. The measure of droughts refers to the number of months from 1950 to 1959 in which the monthly rainfall was strictly lower than the long-run average of each particular month, and therefore accounting for seasonality and non-expected periods of low rainfall. The number of events reflecting social and political discontent are counted during the period 1960-1969 using references to related events in two Mexican newspapers with national coverage: *El Universal* and *Excelsior*, further details in appendix A.1 . Distance of *ejido* from municipal headquarters refers to the population-weighted minimum Euclidean distance of the *ejido* localities from the municipal headquarters (See Appendix Figure A-3 for details).

Table 2: Distance from the municipal headquarters and political competition: Accounting for the area of agricultural land available for redistribution and stock of land granted by quartiles of distance from the municipal headquarter

Dependent variable: Distance of *ejido* from municipal headquarters				
	(1)	(2)	(3)	(4)
Competition measured as:	Opposition vote share		Events of Social and Political Discontent	
Econometric Specification:	OLS	IV	OLS	IV
Panel A: Controlling for the area of agricultural land available for redistribution by quartiles of distance from the municipal headquarters at time t				
Post 1960 × Competition	2.945**	6.133**	2.188**	8.564**
	(1.323)	(2.566)	(0.961)	(4.322)
R-squared	0.591		0.593	
First Stage R-Squared		0.630		0.522
First Stage Partial F		41.06		11.29
Panel B: Controlling for the stock of land granted by quartiles of distance from the municipal headquarters up to time t				
Post 1960 × Competition	2.912**	6.541**	2.134**	9.243**
	(1.313)	(2.644)	(0.988)	(4.538)
R-squared	0.588		0.590	
First Stage R-Squared		0.628		0.520
First Stage Partial F		40.52		10.67
Panel C: Controlling for the area of agricultural land available for redistribution by quartiles of distance from the municipal headquarters in 1959				
Post 1960 × Competition	2.320*	6.092**	2.323**	7.923*
	(1.231)	(2.843)	(0.981)	(4.276)
R-squared	0.584		0.587	
First Stage R-Squared		0.637		0.522
First Stage Partial F		38.98		11.40
Panel D: Controlling for the stock of land granted by quartiles of distance from the municipal headquarters in 1959				
Post 1960 × Competition	2.375**	5.475**	2.223**	7.588*
	(1.178)	(2.593)	(0.955)	(4.166)
R-squared	0.584		0.587	
First Stage R-Squared		0.631		0.519
First Stage Partial F		40.27		10.19
Controls for all specifications:				
Municipality Fixed Effects	✓	✓	✓	✓
Year of Allocation Fixed Effects	✓	✓	✓	✓
Observations	17,031	17,031	17,207	17,207

Notes: Robust standard errors in parentheses are clustered at the municipality level, *** p<0.01, ** p<0.05, * p<0.1. Post-1960 is a dummy variable that equals 1 if the *ejido* is granted after 1960. Competition refers to political competition measured at the municipality level using the variable indicated in each column. The IV columns instrument competition measures with the number of months with droughts during the 50s. The measure of droughts refers to the number of months from 1950 to 1959 in which the monthly rainfall was strictly lower than the long-run average of each particular month, and therefore accounting for seasonality and non-expected periods of low rainfall. The number of events reflecting social and political discontent are counted during the period 1960-1969 using references to related events in two Mexican newspapers with national coverage: *El Universal* and *Excelsior*, further details in appendix A.1. Land available is the fraction of land available for redistribution in the specified distance range from the municipal headquarters at year *t*. The land available exclude body waters and deserts. Stock of ejidos refers to the fraction of land redistributed in form of ejidos in the specified distance range from the municipal headquarters. Further details on the construction of these variables are in appendix A-4. All independent variables are standardized.

Table 3: Amount of land and political competition: Is it about appeasing the opposition?

	(1)	(2)	(3)	(4)
Competition measured as:	Opposition vote share		Events of Social and Political Discontent	
Econometric Specification:	OLS	IV	OLS	IV
Panel A: Dependent variable: Number of allocated ejidos				
Post 1960 × Competition	-0.00	-0.01	-0.01***	-0.01
	(0.00)	(0.02)	(0.00)	(0.02)
Observations	130,704	130,704	130,704	130,704
R-squared	0.12	0.00	0.12	0.01
First Stage R-squared		0.466		0.469
First Stage F statistic (Kleibergen-Paap rk Wald)		48.53		35.12
Panel B: Dependent variable: Number of beneficiaries of ejidos				
Post 1960 × Competition	-0.08	-0.89	-0.71**	-0.97
	(0.30)	(1.56)	(0.35)	(1.69)
Observations	130,218	130,218	130,218	130,218
R-squared	0.09	0.00	0.09	0.00
First Stage R-squared		0.467		0.470
First Stage F statistic (Kleibergen-Paap rk Wald)		48.43		35.12
Panel C: Dependent variable: Area granted in ejidos per beneficiary				
Post 1960 × Competition	-0.06	-0.24	-0.11	-0.26
	(0.09)	(0.52)	(0.09)	(0.57)
Observations	130,220	130,220	130,220	130,220
R-squared	0.06	0.00	0.06	0.00
First Stage R-squared		0.464		0.466
First Stage F statistic (Kleibergen-Paap rk Wald)		47.09		34.27
Controls for all specifications:				
Municipality Fixed Effects	✓	✓	✓	✓
Year of Allocation Fixed Effects	✓	✓	✓	✓

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. 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. see the notes to Appendix Table A-3 and the main text for exact definitions. All competition measures are standardized. The IV columns instrument competition measures with the number of months with droughts during the 50s. The measure of droughts refers to the number of months from 1950 to 1959 in which the monthly rainfall was strictly lower than the long-run average of each particular month, and therefore accounting for seasonality and non-expected periods of low rainfall. The number of events reflecting social and political discontent are counted during the period 1960-1969 using references to related events in two Mexican newspapers with national coverage: *El Universal* and *Excelsior*, further details in appendix A.1

Online Appendix
"Political Competition and State Capacity Evidence from a Land Allocation Program in Mexico"

March 18, 2022

A Data sources and variable construction details

We use data on the spatial location of localities and municipal headquarters from the INEGI.[23] We use administrative data on the location of *ejidos* and their mapping to localities from Mexico's land certification program, or *Programa de Certificación de Derechos Ejidales y Titulación de Solares*, (PROCEDE) from the Gobierno de la República Mexicana (2013). The number of beneficiaries at the time of allocation, area originally allocated, and allocation date of each *ejido* come from the *Padrón e Historial de Núcleos Agrarios* (PHINA) at the Registro Agrario Nacional (2012).[24] Appendix Figure A-2 plots the frequency of the allocation of *ejidos* over time. In spite of the well-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.

To compute the distance of *ejidos* from their municipal headquarters, we use the population-weighted distance of the *ejido* localities from the municipal headquarters (see Appendix Figure A-3 for details on the computation).[25] When accounting for the use of roads to compute these distances, we use the trace of roads from the Digital Chart of the World of 1992 and we compute the overall distance of each locality from its municipal headquarters adding up two different figures. First, the Euclidean distance from the locality to the closest point in a road that leads to the municipal headquarters, and second, the length of the segment that connects such point to the municipal headquarters following the road path.

Electoral data to compute vote shares of the PRI and opposition parties comes from the electoral database at the Centro de Investigación para el Desarrollo A.C (CIDAC) (2012).[26] In additional exercises, we further 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 Table A-2.

Rainfall data to construct our instrumental variable of the numbers of months with drought during the 1950s comes from a freedom of information request to the Comision Nacional del Agua (CONAGUA) (2013).[27]

We construct *ejido*-level measures of climate and geography (e.g., altitude, area, rainfall, soil humidity) using corresponding data from the Instituto Nacional de Estadística y Geografía (INEGI) (2013).[28] We also use information about the land quality of the allocated *ejidos* from two different sources (Food and Agriculture Organization (FAO), 2014; U.S. Department of Agriculture, 2014). First, we use the inherent land quality index database reported by the U.S. Department of Agriculture that rates soil resilience and performance

[23] See, http://www.inegi.org.mx/est/contenidos/Proyectos/ccpv/cpv2000/

[24] The data were scraped from http://phina.ran.gob.mx/phina2/ by Melissa Dell, who generously shared it with us.

[25] We use population figures from the 2000 Census, once all *ejidos* were allocated.

[26] Originally here: http://www.cidac.org/eng/Electoral_Database.php

[27] More info at https://www.gob.mx/conagua

[28] Additional info here, http://www.inegi.org.mx/geo/contenidos/topografia/default.aspx

around the world based on climate and geological factors.[29] 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).[30] 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.[31] The soil quality measure is a seven-level scale, which we turn into a dummy variable for ease of interpretation.[32] Finally, we rely on shapefiles of land-use published by the Instituto Nacional de Estadística y Geografía (INEGI) (2007) to compute agricultural land available for redistribution at different distances from municipal headquarters. Details on the use of these maps are presented in Appendix Figure A-4.

We borrow information on the number of federal, state and municipal bureaucrats during the 40s from Garfias (2018), who computes the number of public servants at the municipality level using micro level data from population censuses.

We also use INEGI's historical catalog of localities to construct several variables: municipal log population in 1900 and 1960, municipal headquarters population in 1960, and the number of *ranchos* and *haciendas* Instituto Nacional de Estadística y Geografía (INEGI) (2011).[33] We additionally 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.

To explore the relationship between the distance from municipal headquarters and public goods provision, we leverage 1990 and 2000 census data from INEGI on the share of households with access to piped water, drainage, and electricity. We also use the georeferenced universe of public schools in the 2011 census to calculate the number of schools (per capita) founded before 1990 and 2000 and located within 5kms of each locality (Instituto Nacional de Estadística y Geografía (INEGI), 1990, 2000; Gobierno de la República Mexicana, 2011).

We report the summary statistics of the main variables in Appendix Table A-3 and of other variables in Appendix Table A-4. There is significant variation in our baseline distance of *ejidos* to their municipal headquarters (mean of 19 km and standard deviation of 22), as well as on our expected political competition variables. The average opposition vote share was around 16% (standard deviation of 14%), and there were roughly 0.5 events of social and political discontent across municipalities. Lastly, consistent with historical accounts about the harsh droughts that Mexico suffered during the 1950s, the average number of dry months is around 59 (standard deviation of 25).

A.1 Coding of events of social and political discontent during the 1960s

To measure social and political discontent during the 1960s, we relied on all issues of Mexico's two main newspapers, *Excelsior* and *El Universal*, from January 1st, 1960 to

[29] http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/use/?cid=nrcs142p2_054011

[30] See http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/edu/college/?cid=nrcs142p2_054029

[31] http://data.fao.org/map?entryId=c1f62b50-88fd-11da-a88f-000d939bc5d8&tab=metadata

[32] 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.

[33] We accessed the data from http://www.inegi.org.mx/geo/contenidos/geoestadistica/catalogoclaves.aspx

December 31st, 1969. We searched on the articles' title, subtitle, and main text to identify all news about protests, strikes, demonstrations, riots and marches for every municipality.

When the articles do not mention a particular location or when they refer to national or state-level event, we err on the conservative side and avoid assign it to a particular municipality. If instead a given municipality (or municipalities) are listed, we then coded the corresponding municipality as affected by the event.

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

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

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

Appendix Figure A-5 shows the distribution of events of social and political discontent over time. The most common words in the resulting set of articles (excluding common Spanish expressions and distinguishing capital letters) are presented in Table A-5

B Additional robustness checks

First, we investigate whether the increase in the distance of allocated *ejidos* varies with the nature of the political opposition faced by the PRI. Some of the opposition parties were friendly to the PRI.[34] 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. Their presence potentially prevented the development of true competition. Presumably, the development of such parties was particularly important in places where the PRI expected some real political competition. Thus, we expect a significantly smaller but still positive interaction with the vote share of friendly opposition parties. Appendix Table A-10 confirms that both effects are positive and statistically significant, but the effect of unfriendly parties is between two to three times that of friendly parties (e.g., 3.039 km versus 1.419 km in column 4). The p-value of the test of the inequality of these coefficients is 0.13.

Second, we explore whether our OLS- and IV-DiD estimates are biased by the strength of local rural elites. For example, (Sinkler, 2014) argues that fewer *ejidos* were distributed in municipalities where elites were more powerful. This could have led to more peasant dissidence and thus greater expected political competition, but also to *ejido* allocations farther from municipal headquarters. Moreover, the strength of rural elites likely shaped their financial situation and thus their ability to deal with the droughts they endured during the 1950s. Panel A of Appendix Table A-11 controls for the number of large landholdings—*ranchos* and *haciendas*—in each municipality and the interaction with the post-1960 indicator. The results are similar in size and statistical significance to those reported in Tables A-8 and 1, thus suggesting that the strength of the rural elites is unlikely to drive our findings.

[34] See Appendix Table A-2 for the classification of parties.

Third, since the granting of *ejidos* was largely determined at the state level and droughts are likely to be spatially clustered, another concern is that our results are driven by state-level confounders shaping distinct patterns in *ejido* distance after 1960. To address these potential concerns, in Panel B of Appendix Table A-11 we report robustness to including interactions of the post-1960 indicator with state-fixed effects, as well as state-specific quadratic time trends.

Fourth, we repeat our exercises using distance measures that account for the terrain's elevation profile or the available roads to reach municipal headquarters in Appendix Table A-12.[35]

Appendix References

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Molinar, J., & Weldon, J. (1990). Elecciones de 1988 en México: Crisis del autoritarismo. *Revista Mexicana de Sociología*, *52*(4), 229-262.

Peiro, I. (1998). *México: crisis, reestructuración económica, social y política, 1982-1996*. Siglo XXI Editores.

[35] For details on the computation of these distances, see Panel B of Figure A-3.

Registro Agrario Nacional. (2012). *Sistema de Información del Padron e historial de nucleos agrarios (PHINA) [database].* Retrieved by Melissa Dell, February 9, 2012, from https://phina.ran.gob.mx/index.php

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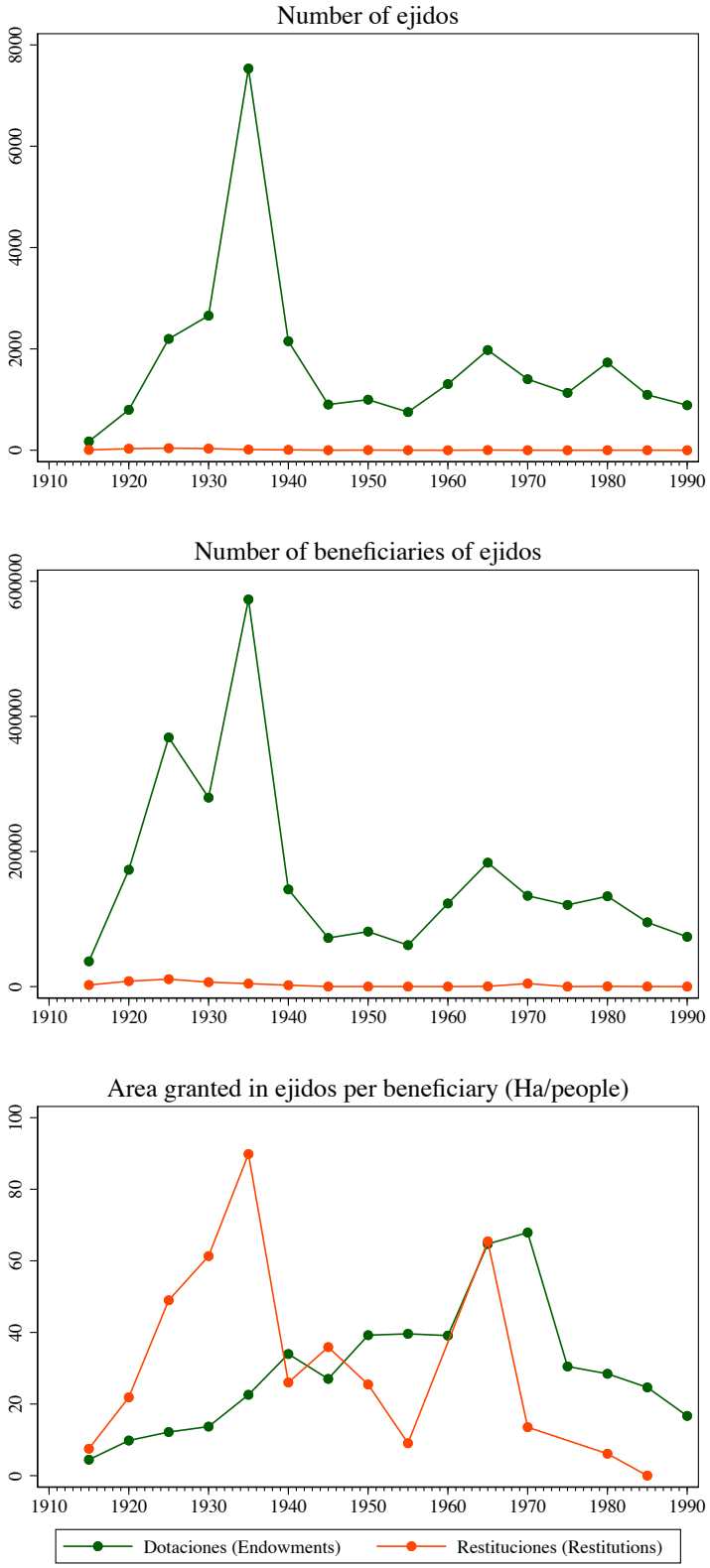
Online Appendix: Tables

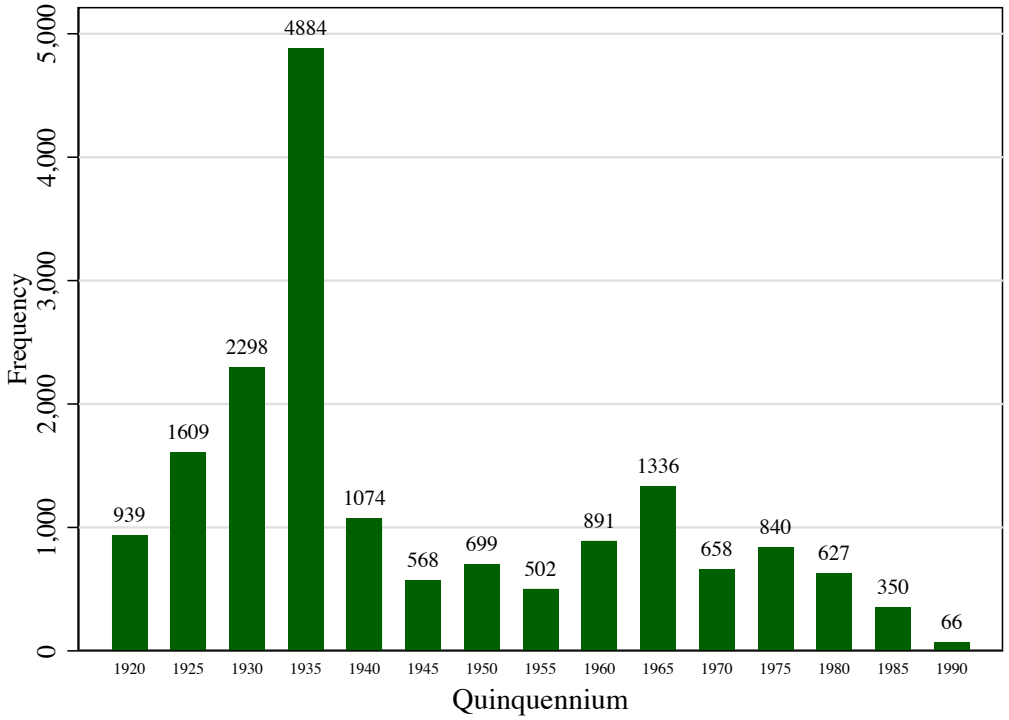
Online Appendix: Figures

Figure A-1: Evolution of new land endowments, and restitutions



Notes: The number of events refers to the number of approved petitions. Authors' calculation with data from the *Padrón e Historial de Núcleos Agrarios*

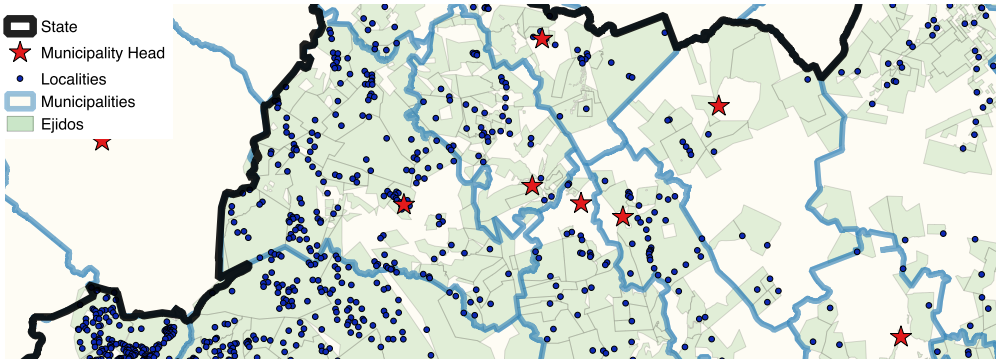
Figure A-2: Allocation of *ejidos* over time



Notes: Number of allocated *ejidos*. Authors' calculation with data from the *Padrón e Historial de Núcleos Agrarios - PHINA. Baseline sample of municipalities with political information data.*

Figure A-3: Spatial distribution of *ejidos* and computation of distances

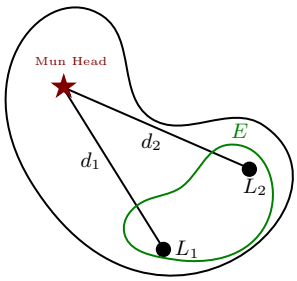
Panel A: Example of location and distribution of main geographical features in the administrative data



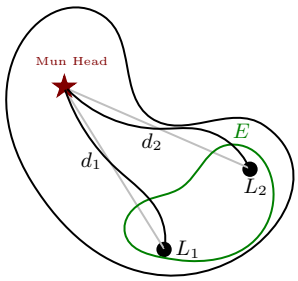
This panel presents an excerpt of the location of ejidos and the administrative divisions of Mexico. The country is divided into 31 states and its capital city. States, at the same time, are divided into municipalities. There are 2,448 municipalities in which there exist around 200,000 population centers or Localities. Only one of the localities in each municipality serves as municipality seat.

Panel B: Computation of distances of ejido from municipality head

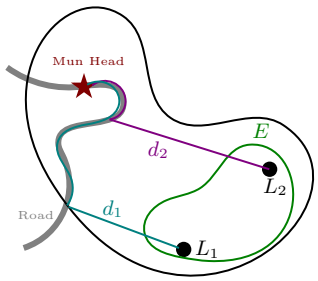
Consider a hypothetical municipality similar to those presented in Panel A, with *ejidos* that may include multiple localities. This municipality has one *ejido* (E) with two localities: L_1 and L_2. Each locality has a number on inhabitants given by Population(L_1) and Population(L_2), respectively. Let d_1 and d_2 denote the distances of these localities form the municipal headquarters. We compute different measures of d_1 and d_2 depending on whether or not they account for terrain and roads as illustrated in the following figures:



Option 1: Minimum Euclidean distance



Option 2: Minimum distance accounting for terrain elevation



Option 3: Minimum distance via DCW roads

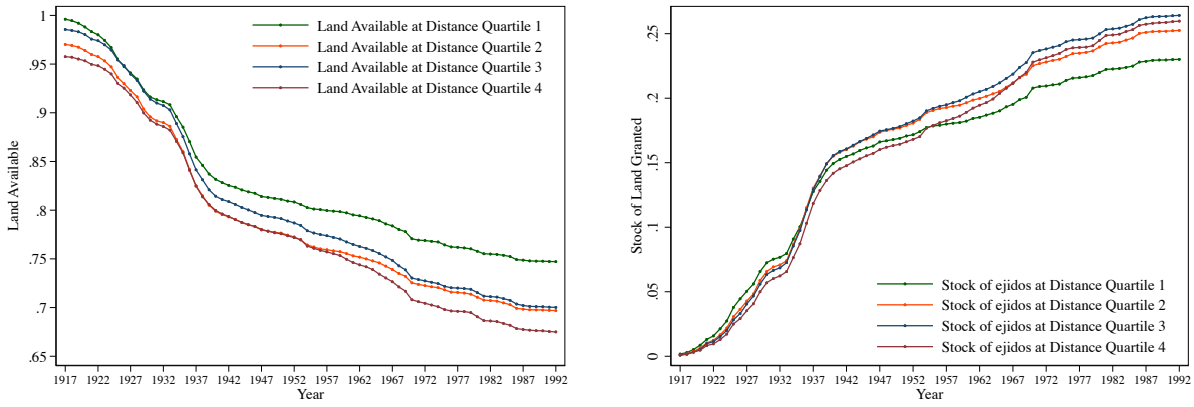
Using each of these options we defined the distance of *ejido* (E) from the municipal headquarters as:

$$d(E, \text{Mun headquarter}) = d_1 \left(\frac{\text{Population}(L_1)}{\text{Population}(L_1)+\text{Population}(L_2)} \right) + d_2 \left(\frac{\text{Population}(L_2)}{\text{Population}(L_1)+\text{Population}(L_2)} \right).$$

In other words, it is the population-weighted average distance form the municipal headquarters to the localities within *ejido* E.

Notes: The distance from a locality to the municipal headquarters accounting for elevation terrain profile (Option 2) penalizes the minimum Euclidean distance (Option 1) when there are changes in altitude between them. The distance via DCW roads (Option 3) accounts for the use of roads to reach the municipal headquarters. The trace of those roads comes from the Digital Chart of the World of 1992 and the overall distance of each locality from its municipal headquarters is computed adding up two different figures. First, the Euclidean distance from the locality to the closest point in a road that leads to the municipality head, and second, the length of the segment that connects such point to the municipal headquarters following the road path.

Figure A-4: Calculating the stock of ejidos and land available for redistribution



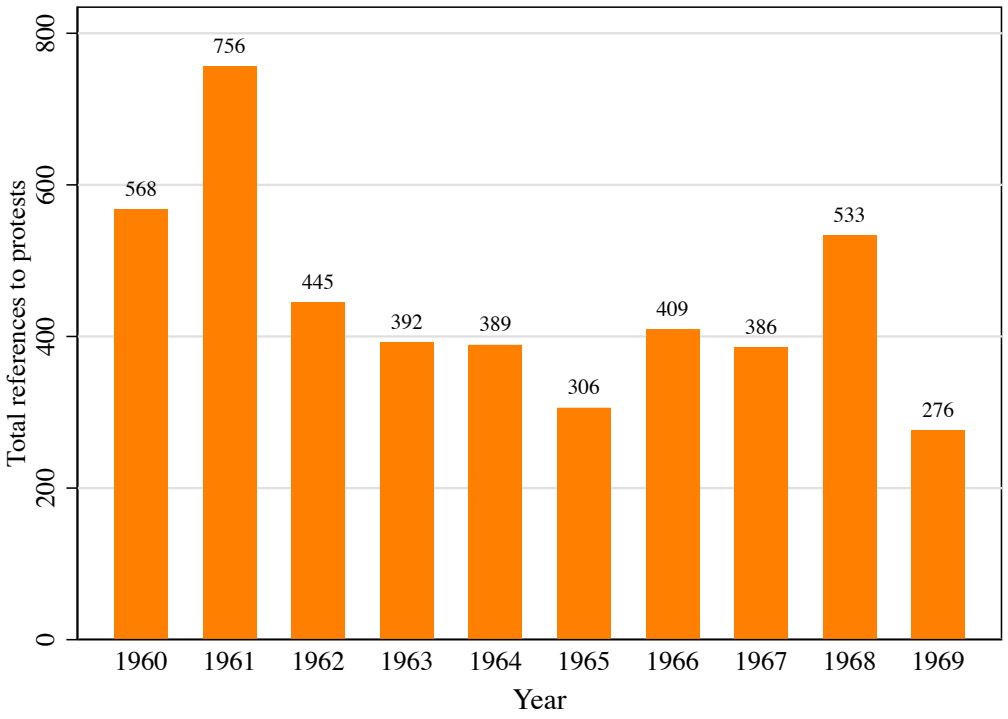
In Table 2, we present our baseline results after controlling for the stock of agricultural land still available for redistribution and the amount of *ejido* land distributed by quartiles of distance from the municipal headquarters. In order to compute these measures, we divide the country into a synthetic grid of 2km by 2km. We then calculate the distance from the centroid of each one of these grid cells to the municipal headquarters that corresponds to the municipality where most of the grid cell's area falls. We then classify the grid cells into four quartiles using the distribution of the distances within each municipality. We then create a panel at the grid-year level ($\approx 33'350,000$ observations) in which we compute for each grid cell the fraction of the grid area distributed in the form of *ejidos* as well as the agricultural land up to year t. We define agricultural land as the land that was not classified as desert or water body according to INEGI's shapefiles of land use. Finally, we aggregate these measures at the municipality-year level as follows,

$$\{\text{Land Available at Distance Quartile } q\}_{m,t} = \frac{\sum_{c=1}^{grids_{m,q}} \text{Agricultural Land}_{c,q,m,t} - \sum_{c=1}^{grids_{m,q}} \text{Area of } ejidos_{c,q,m,t-1}}{\sum_{c=1}^{grids_{m,q}} \text{Total area}_{c,q,m}}$$

$$\{\text{Stock of land granted at Distance Quartile } q\}_{m,t} = \frac{\sum_{c=1}^{grids_{m,q}} \text{Area of } ejidos_{c,q,m,t-1}}{\sum_{c=1}^{grids_{m,q}} \text{Total area}_{c,q,m}}$$

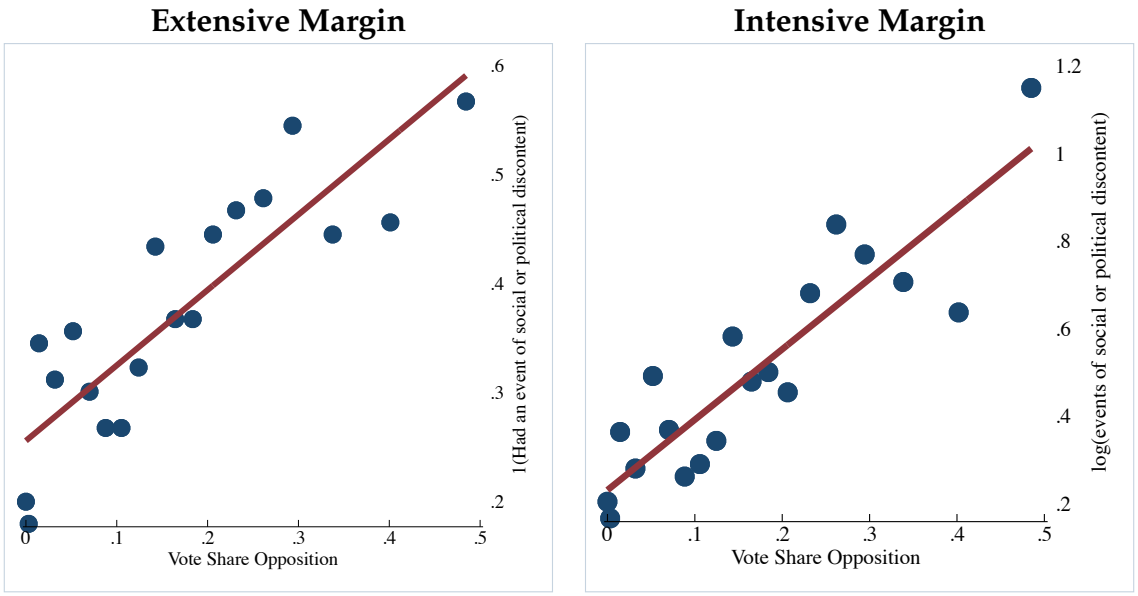
where c indexes grid cells, q distance quartiles, m municipalities, and t years. $grids_{m,q}$ is the total number of grid cells in municipality m that belongs to distance quartile q.

Figure A-5: Number of social and political events reflecting discontent per year



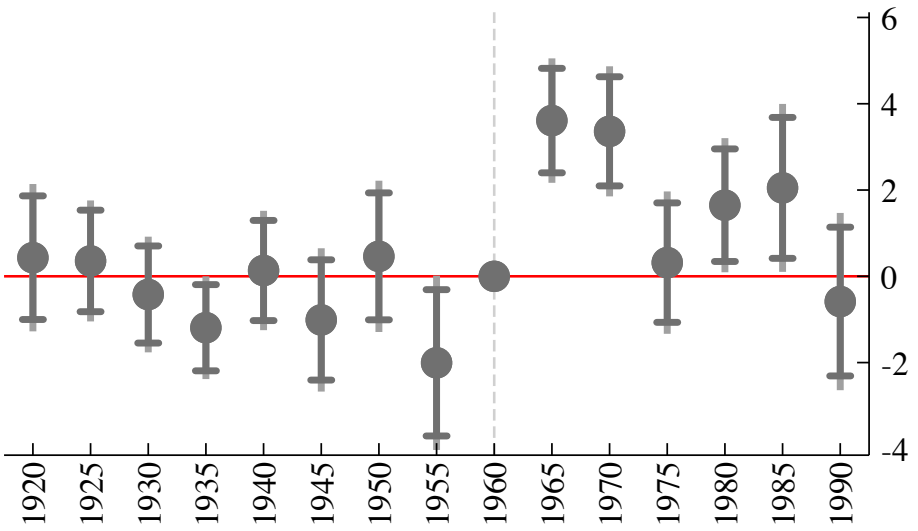
Notes: Total number of social and political events reflecting discontent per year as reported in news articles referring to protests, strikes, demonstrations, riots and marches (excluding national and state-level protests for which the municipality where they occurred is not specified). Authors' calculation with news from *Excelsior* and *El Universal*.

Figure A-6: Opposition Vote share and Events of Social and Political Discontent



Notes: Figures represent bin-scatters at the municipality level. Opposition vote share $= 1 -$ PRI vote share. The number of events reflecting social and political discontent are counted during the period 1960-1969 using references to related events in two Mexican newspapers with national coverage: *El Universal* and *Excelsior*, further details in appendix A.1

Figure A-7: The effect of expected political competition (events of social and political discontent) on the distance of *ejidos* from municipal headquarters over time



Notes: Estimates, and 95 and 99 percent confidence intervals, of the regression of the distance of the allocated *ejidos* from their municipal headquarters on municipality fixed effects, quinquennium fixed effects, and the interaction of the standardized events of social and political discontent events from 1960-1969 and the full set of quinquennium dummies. The omitted quinquennium is 1960 and represented by the coefficient without confidence intervals.

Table A-1: OLS estimates: Clientelism and incumbency status

Dependent variable is:	The party gives or promises [...] to citizens as inducement to obtain their votes.					
	Consumer Goods	Public Social Policy Schemes	Preferential Access to Public Sector Employment	Preferential Access to Government Contracts	Influence Regulatory Rules	Clientelism Index
	(1)	(2)	(3)	(4)	(5)	(6)
Mean dependent variable:	57.34	64.30	60.94	60.69	60.31	60.60
Incumbent Party	8.9141***	10.8692***	10.2314***	13.0603***	10.8299***	10.9964***
	(1.7343)	(1.5545)	(1.5382)	(1.8733)	(1.4407)	(1.5571)
Controlling for ideology (left-right)	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	505	505	505	505	505	505
R-squared	0.7963	0.6740	0.7787	0.7459	0.7248	0.7477

Notes: Observations at the political party level. The sample includes 505 parties across 88 countries observed in 2009 by the Democratic Accountability and Linkages Project. Data includes all democratic polities of at least two million inhabitants with a minimum recent experience of two rounds of national electoral competition under at least semidemocratic conditions. The latter were identified in terms of average civil and political rights scores of at least 4.0, as awarded by the annual Freedom House survey. Beyond this set of countries, a few prominent countries with multi-party electoral politics were included (Egypt, Indonesia, Malaysia, Pakistan, Russia). Dependent variables come from the average results of expert surveys within the country evaluating the statement: "Consider whether candidates and parties give or promise to citizens [...] as inducement to obtain their votes. How much effort do this party expend to attract voters providing or promising [...]." Where [...] corresponds to any of the options specified in the columns 1 to 5. All dependent variables range from 0 to 100 where 100 represent a major effort. Incumbent is a dummy equal to one if the party received the maximum average vote share in the country in the last two legislative elections. Clientelism Index is the average of the responses used in columns 1 to 5. Clustered errors at the country level in parenthesis.*** $p<0.01$, ** $p<0.05$, * $p<0.1$

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 Reconstruccion Nacional)	Unfriendly
PRDPMT	PRD + PMT	Unfriendly
PRD	Partido de la Revolucion Democratica	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 Democrata Mexicano	Unfriendly
PCM	Partido Comunista Mexicano	Unfriendly
PCDP	Partido del comite de Defensa Popular	Unfriendly
PC	Previous PCM	Unfriendly
PARM	Partido Autentico de la Revolucion Mexicana	Friendly
PAN	Partido de Accion 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 & Weldon, 1990) and (Peiro, 1998) .

Table A-3: Summary statistics

	Mean	Standard deviation	N
A. Public goods			
a. Census of Schools in 2011			
Number of public schools per capita within 5km of the locality			
- Active and established before 1990	0.729	2.331	199,391
- Active and established before 2000	0.958	3.279	199,391
b. Census in 2000			
Share of households in locality with...			
- Piped water	0.455	0.407	107,218
- Drainage	0.282	0.322	107,218
- Electricity	0.674	0.391	107,218
c. Census in 1990			
Share of households in locality with...			
- Piped water	0.316	0.375	97,484
- Drainage	0.131	0.229	97,484
- Electricity	0.423	0.422	97,484
B. Bureaucratic state capacity			
Varying by locality:			
-Distance of locality to municipal headquarters (km)	19.152	21.604	199,391
-Distance of locality from municipal headquarters accounting for terrain elevation profile (km)	19.219	22.023	199,391
-Distance of locality from municipal headquarters (km) via DCW roads	21.582	23.406	199,391
Varying by ejido:			
-Distance of *ejido* from municipal headquarters (km)	18.848	21.335	17,239
-Distance of *ejido* from municipal headquarters accounting for terrain elevation profile (km)	18.894	21.257	17,239
-Distance of *ejido* from municipal headquarters via DCW roads (km)	21.262	22.239	17,239
C. Municipal political competition			
Average of 1980s elections:			
-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
Discontent 1960-1969:			
Events of social and political discontent			
- Log (1+ number of events of social and political discontent)	0.386	0.762	2,440
D. Instrument for political competition and events of social and political discontent			
Months with droughts 1950-1959	58.535	25.628	2,440

Notes: Opposition vote share = 1 − PRI vote share. The number of events reflecting social and political discontent are counted during the period 1960-1969 using references to events in two Mexican newspapers with national coverage, *El Universal* and *Excelsior*. Further details in appendix A.1.

Table A-4: Additional summary statistics

	Mean	Standard deviation	Observations
A. Municipal geographical covariates			
Population Density 1900 (people/Km2)	24.051	39.437	2,290
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. *Ejido* **land quality**			
Agricultural constraints (FAO)	0.181	0.377	22,819
Inherent land quality index (U.S. Department of Agriculture)	4.706	2.586	22,943
C. Variables for robustness checks			
Varying by municipality and year:			
-Number of allocated *ejidos*	0.141	0.791	164,715
-Stock of allocated *ejidos*	6.109	10.642	164,715
-Number of beneficiaries of *ejidos*	13.468	88.401	164,715
-Area granted in *ejidos* per beneficiary (Ha/people)	2.994	34.085	164,715
-Land Available in Distance Quantile 1 (As fraction of total area in distance quantile 1)	0.828	0.256	179,740
-Land Available in Distance Quantile 2 (As fraction of total area in distance quantile 2)	0.792	0.289	179,740
-Land Available in Distance Quantile 3 (As fraction of total area in distance quantile 3)	0.803	0.272	179,740
-Land Available in Distance Quantile 4 (As fraction of total area in distance quantile 4)	0.782	0.304	179,740
-Stock of land granted in form of ejidos at Distance Quantile 1 (As fraction of total area in distance quantile 1)	0.154	0.228	179,740
-Stock of land granted in form of ejidos at Distance Quantile 2 (As fraction of total area in distance quantile 2)	0.163	0.23	179,740
-Stock of land granted in form of ejidos at Distance Quantile 3 (As fraction of total area in distance quantile 3)	0.167	0.232	179,740
-Stock of land granted in form of ejidos at Distance Quantile 4 (As fraction of total area in distance quantile 4)	0.159	0.233	179,740
Varying by municipality:			
- Number of *ranchos* and *haciendas*	47.033	90.628	2,455
- Social capital in 1994 (Principal component)	0	1.445	2,455
- Population density in 1960 (people/km2)	64.573	345.753	2,389
- Population in the municipal headquarters in 1960 (people)	5,723.717	24,873.226	2,371
- Municipal Bureaucrats 1940	0.747	10.259	2,386
- Federal and State Bureaucrats 1940	216.413	10,396.091	2,386
- Land Available at Distance Quantile 1 in 1959 (As fraction of total area in distance quantile 1)	0.798	0.264	2,365
- Land Available at Distance Quantile 2 in 1959 (As fraction of total area in distance quantile 2)	0.757	0.292	2,365
- Land Available at Distance Quantile 3 in 1959 (As fraction of total area in distance quantile 3)	0.77	0.275	2,365
- Land Available at Distance Quantile 4 in 1959 (As fraction of total area in distance quantile 4)	0.753	0.306	2,365
- Stock of land granted in form of ejidos at Distance Quantile 1 in 1959 (As fraction of total area in distance quantile 1)	0.181	0.234	2,365
- Stock of land granted in form of ejidos at Distance Quantile 2 in 1959 (As fraction of total area in distance quantile 2)	0.195	0.235	2,365
- Stock of land granted in form of ejidos at Distance Quantile 3 in 1959 (As fraction of total area in distance quantile 3)	0.198	0.236	2,365
- Stock of land granted in form of ejidos at Distance Quantile 4 in 1959 (As fraction of total area in distance quantile 4)	0.186	0.238	2,365

Notes: 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 *ejidos* by year. Further details on the construction of land available by distance quartiles are in Appendix Figure A-4. The number of events reflecting social and political discontent are counted during the period 1960-1969 using references to related events in two Mexican newspapers with national coverage: *El Universal* and *Excelsior*, further details in appendix A.1.

Table A-5: Most common words identifying events of social and political discontent

Freq	Word	Freq	Word	Freq	Word	Freq	Word
770	huelga	139	aumento	99	miembros	82	intervencion
626	campesinos	136	policia	99	problema	82	servicio
511	trabajadores	131	agua	99	grupos	82	lider
368	estudiantes	129	escuela	98	habitantes	81	republica
368	tierras	128	zona	98	comision	81	secretario
318	gobierno	127	comercio	97	movimiento	80	palacio
308	gobernador	125	piden	96	situacion	80	guerrero
304	sindicato	124	terrenos	95	municipios	80	capital
279	ciudad	118	personas	95	manifestacion	79	representantes
274	presidente	118	apoyo	95	ejidales	77	mil
261	ejidatarios	117	federal	94	departamento	75	funcionarios
254	nacional	115	obreros	94	agrarias	75	federales
254	municipal	110	mexico	93	local	75	propietarios
253	grupo	109	poblacion	92	comerciantes	75	colectivo
252	autoridades	108	municipio	92	problemas	74	alcalde
245	denuncian	107	compania	90	pagos	74	puebla
231	maestros	106	pobladores	89	exigen	74	ley
220	protesta	106	ejercito	89	denuncia	73	descontento
190	universidad	105	falta	88	lideres	73	agrarios
173	empresa	105	comunidades	88	dias	73	pais
172	conflicto	103	mitin	87	despojo	72	ayuntamiento
149	paro	102	san	86	federacion	71	revision
146	union	101	entidad	86	municipales	71	acuerdo
145	general	100	frente	83	ejidal	71	alumnos
141	contrato	99	industria	82	estudiantil	70	region

Notes: Frequency of most common words across news headlines after filtering most common words in spanish.

Table A-6: *Ejido* distance from municipal headquarters and public goods provision

	(1)	(2)	(3)	(4)
	Share of households in locality with...			Number of
Dependent variable:	Piped water	Drainage	Electricity	Schools per capita
Panel A: Localities in 1990				
Distance of *ejido* locality from municipal headquarters	-0.0017***	-0.0010***	-0.0033***	-0.0022***
	(0.0003)	(0.0002)	(0.0005)	(0.0004)
Observations	31,958	31,958	31,958	31,958
R-squared	0.3152	0.2769	0.3903	0.1022
Panel B: Localities in 2000				
Distance of *ejido* locality from municipal headquarters	-0.0011***	-0.0018***	-0.0023***	-0.0028***
	(0.0003)	(0.0004)	(0.0004)	(0.0006)
Observations	41,005	41,005	41,005	41,005
R-squared	0.3118	0.4255	0.3713	0.2113

Notes: Cross-section of localities that overlap with ejidos. All specifications include municipality fixed effects. Robust standard errors in parentheses are clustered at the municipality level, Distance of *ejido* from municipal headquarters refers to the population-weighted minimum Euclidean distance of the *ejido* localities from the municipal headquarters (See Appendix Figure A-3 for details). The number of public schools in 2000 and 1990 is the number of active public schools funded before 2000 and 1990, respectively. It is computed within a 5km radius around the locality. Population comes from the 2000 and 1990 census of localities., *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table A-7: Predetermined Covariate Balance

Dependent variable:	Population Density in 1900	Average monthly rainfall	Rain variability	Average soil humidity	Soil humidity variability	Average altitude	Ruggedness (altitude variability)	Agricultural Constraints	Inherent land Quality index	Municipal Bureaucrats 1940	Federal and State Bureaucrats 1940
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)		
Opposition Vote Share	5.146***	-3.195**	-2.817**	-0.977	-1.367**	-19.846	-20.316***	0.012	0.147	0.135***	1.272***
	(1.223)	(1.451)	(1.303)	(3.203)	(0.502)	(25.489)	(5.483)	(0.014)	(0.105)	(0.035)	(0.185)
Observations	1,566	1,676	1,676	1,679	1,679	1,679	1,679	1,675	1,677	1,644	1,644
R-squared	0.282	0.590	0.524	0.090	0.031	0.534	0.236	0.446	0.294	0.219	0.130
Events of Social and Political Discontent	5.665***	-0.589	-0.626	-1.116	-0.501	-10.287	6.382	0.009	0.029	0.246***	2.664***
	(1.645)	(0.807)	(0.858)	(2.514)	(1.067)	(24.435)	(5.903)	(0.014)	(0.046)	(0.030)	(0.219)
Observations	1,566	1,676	1,676	1,676	1,676	1,676	1,676	1,672	1,674	1,643	1,643
R-squared	0.289	0.586	0.519	0.088	0.030	0.533	0.228	0.445	0.292	0.268	0.206
Months with Droughts 1950-1959	1.176	-15.841***	-7.516	-9.168***	-1.147	-93.392**	-31.374**	0.072**	0.094	0.012	0.678**
	(1.059)	(5.503)	(5.135)	(2.848)	(0.890)	(42.299)	(12.929)	(0.035)	(0.219)	(0.025)	(0.307)
Observations	1,566	1,676	1,676	1,679	1,679	1,679	1,679	1,675	1,677	1,644	1,644
R-squared	0.262	0.632	0.535	0.096	0.030	0.539	0.241	0.465	0.292	0.200	0.113
State Fixed Effects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Notes: All variables in rows are standardized. 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. The sample of municipalities is the one entering in the baseline regression. see the notes to Appendix Table A-3 and the main text for exact definitions. The measure of droughts refers to the number of months from 1950 to 1959 in which the monthly rainfall was strictly lower than the long-run average of each particular month, and therefore accounting for seasonality and non-expected periods of low rainfall. The number of events reflecting social and political discontent are counted during the period 1960-1969 using references to related events in two Mexican newspapers with national coverage: *El Universal* and *Excelsior*, further details in appendix A.1

Table A-8: Distance from municipal headquarters and political competition: Controlling for trends based on predetermined variables

Dependent variable: Distance of *ejido* from municipal headquarters		
	(1)	(2)
Competition measured as:	Opposition vote share	Events of Social and Political Discontent
Post 1960 × Competition	3.415***	1.985**
	(1.281)	(0.982)
Observations	15,848	16,085
R-squared	0.584	0.585
Controls for all specifications:		
Post 1960 × Covariates	✓	✓
Municipality Fixed Effects	✓	✓
Year of Allocation Fixed Effects	✓	✓

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. Competition refers to political competition measured at the municipality level using the variable indicated in each column (see the notes to Appendix Table A-3 and the main text for exact definitions). Distance of *ejido* from municipal headquarters refers to the population-weighted minimum Euclidean distance of the *ejido* localities from the municipal headquarters (See Appendix Figure A-3 for details). All competition measures are standardized. All regressions are controlling for geographic variables, climatic variables, and municipal bureaucratic capacity measures all interacted with a post-1960 indicator in Appendix Table A-7

Table A-9: Test for weak instruments and weak-IV robust inference

	(1)	(2)
Dependent variable: Distance of *ejido* from municipal headquarters		
Model Estimation	IV	IV
Panel A: Estimates from the baseline specification		
	Opposition vote share	Events of Social and Political Discontent
Post 1960 × Competition	7.077***	9.847**
	(2.710)	(4.716)
Observations	17,059	17,239
Kleibergen-Paap rk Wald F statistic	39.166	9.559
Panel B: Test under the null hypothesis that instruments are weak		
	Critical value (result)	
Stock-Yogo test (iid errors)		
$b = 25\%$	5.53 (Rejected)	5.53 (Rejected)
$b = 20\%$	6.66 (Rejected)	6.66 (Rejected)
$b = 15\%$	8.96 (Rejected)	8.96 (Rejected)
$b = 10\%$	16.38 (Rejected)	16.38 (Not rejected)
Montiel-Pflueger test (auto-correlated errors)		
$\tau = 30\%$	12.039 (Rejected)	12.039 (Not Rejected)
$\tau = 20\%$	15.062 (Rejected)	15.062 (Not Rejected)
$\tau = 10\%$	23.109 (Rejected)	23.109 (Not Rejected)
$\tau = 5\%$	37.418 (Rejected)	37.418 (Not Rejected)
Panel C: Robust inference with potentially weak instruments		
Null hypothesis (H_0): Post 1960 × Competition = 0		
Anderson-Rubin Test		
Statistic chi2(1)	5.99	4.73
p-value (Prob > chi2)	0.0144	0.0296

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. Post-1960 is a dummy variable that equals 1 if the *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 Appendix Table A-3 and the main text for exact definitions). The instrument used is months with droughts, measured as the number of months from 1950 to 1959 in which the monthly rainfall was strictly lower than the long-run average of each particular month, and therefore accounting for seasonality and non-expected periods of low rainfall. Distance of *ejido* from municipal headquarters refers to the population-weighted minimum Euclidean distance of the *ejido* localities from the municipal headquarters (See Appendix Figure A-3 for details). All competition measures are standardized.

Panel B tests if instruments are weak, assuming independent and identically distributed (Stock-Yogo) or auto-correlated (Montiel-Pflueger) errors. In each case, we reject the null hypothesis of weak instruments if the Kleibergen-Paap rk Wald F statistic exceeds the critical value (for a significance level of 5%). In the Stock-Yogo test, the critical value depends on a lower threshold b for the bias of the IV estimator relative to OLS's bias. In the Montiel-Pfluege test, the critical value depends on whether the asymptotic estimator bias (or Nagar bias) exceeds a fraction τ of a "worst-case" benchmark. We report critical values for conventional thresholds (implemented with the `ivreg2` and `weakivtest` commands in Stata, respectively) for thresholds $b = 10\%, 15\%, 20\%, 25\%$ and $\tau = 5\%, 10\%, 20\%, 30\%$.

Panel C implements a minimum distance approach for robust hypothesis testing in the presence of potentially weak instruments on the main coefficients reported in Panel A (implemented with the `rivtest` command in Stata).

Table A-10: Distance from municipal headquarters and opposition vote share: Distinguishing friendly and unfriendly opposition

Dependent variable: Distance of *ejido* from municipal headquarters				
	(1)	(2)	(3)	(4)
Post-1960 × Vote share opposition	3.243**			
	(1.308)			
Post-1960 × Vote share friendly opposition		1.167**		1.419***
		(0.525)		(0.505)
Post-1960 × Vote share unfriendly opposition			2.919**	3.039**
			(1.401)	(1.403)
Municipality Fixed Effects	✓	✓	✓	✓
Year of Allocation Fixed Effects	✓	✓	✓	✓
Observations	17,059	17,059	17,059	17,059
R-squared	0.579	0.576	0.578	0.579

Test of inequality of coefficients in Column 4

	p-value
H_o: $\beta_{\text{Post-1960} \times \text{Vote share unfriendly}} \leq \beta_{\text{Post-1960} \times \text{Vote share friendly}}$	
H_a: $\beta_{\text{Post-1960} \times \text{Vote share unfriendly}} > \beta_{\text{Post-1960} \times \text{Vote share friendly}}$	0.130

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. All vote shares are standardized. For the classification of friendly opposition, see Section 4.1 and Appendix Table A-2.

Table A-11: Distance from municipal headquarters and political competition: Accounting for the strength of rural elites and state-specific trends

Dependent variable: Distance of *ejido* from municipal headquarters				
	(1)	(2)	(3)	(4)
Competition measured as:	Opposition vote share		Events of Social and Political Discontent	
Econometric Specification:	OLS	IV	OLS	IV
Panel A: Strength of rural elites				
Post-1960 × Competition	3.240**	7.124***	2.291**	9.921**
	(1.276)	(2.678)	(1.032)	(4.728)
Post-1960 × Number of *ranchos* and *haciendas*	-0.0193***	-0.0193***	-0.0178***	-0.0137***
	(0.00535)	(0.00581)	(0.00501)	(0.00527)
Observations	17,059	17,059	17,239	17,239
R-squared	0.580		0.582	
First Stage R-Squared		0.621		0.518
First Stage F statistic (Kleibergen-Paap rk Wald)		38.98		9.681
Panel B: State-specific trends				
Post-1960 × Competition	2.750***	8.471***	1.109*	8.676***
	(0.662)	(1.964)	(0.655)	(3.243)
Observations	17,059	17,059	17,239	17,239
R-Squared		0.715		0.590
First Stage R-Squared		0.715		0.591
First Stage F statistic (Kleibergen-Paap rk Wald)		15.21		5.005
Quadratic state trends	✓	✓	✓	✓
Post-1960 × State indicator	✓	✓	✓	✓
Controls for all specifications:				
Municipality Fixed Effects	✓	✓	✓	✓
Year of Allocation Fixed Effects	✓	✓	✓	✓

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. Post-1960 is a dummy variable that equals 1 if the *ejido* is granted after 1960. Panel A includes quadratic 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 Appendix Table A-3 and the main text for exact definitions. All competition measures are standardized. The IV columns instrument competition measures with the number of months with droughts during the 50s. The measure of droughts refers to the number of months from 1950 to 1959 in which the monthly rainfall was strictly lower than the long-run average of each particular month, and therefore accounting for seasonality and non-expected periods of low rainfall. The number of events reflecting social and political discontent are counted during the period 1960-1969 using references to related events in two Mexican newspapers with national coverage: *El Universal* and *Excelsior*, further details in appendix A.1

Table A-12: Distance to municipal headquarters and political competition: Results for different distance measures

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Baseline results, *ejidos* allocated from 1914 to 1992, Dependent variable: Distance of *ejido* from municipality head									
Type of minimun distance:	Euclidean			Accounting for Terrain Elevation			Trough DCW Roads		
Econometric Specification	OLS	IV	RF	OLS	IV	RF	OLS	IV	RF
Panel A: Competition measured as the Vote Share of Opposition Parties									
Post 1960 × Competition	3.243**	7.077***		3.366**	7.038**		3.428**	7.122**	
	(1.308)	(2.717)		(1.425)	(2.913)		(1.454)	(3.043)	
Post 1960 × Months with Droughts 1950-1959			2.43**			2.41**			2.44**
			(0.99)			(1.07)			(1.12)
R-Squared		0.621			0.621			0.621	
Observations	17,059	17,059	17,059	17,059	17,059	17,059	17,059	17,059	17,059
First Stage R-Squared		0.621			0.621			0.621	
First Stage F statistic (Kleibergen-Paap rk Wald)		38.99			38.99			38.99	
Panel B: Competition measured as the number of Events of Social and Political Discontent 1960-1969									
Post 1960 × Competition	2.391**	9.847**		2.540**	9.719*		2.574**	9.741*	
	(1.056)	(4.728)		(1.128)	(4.975)		(1.161)	(5.106)	
Post 1960 × Months with Droughts 1950-1959			2.08**			2.06**			2.06*
			(0.96)			(1.03)			(1.08)
R-squared	0.581			0.547			0.548		
Observations	17,239	17,239	17,239	17,239	17,239	17,239	17,239	17,239	17,239
First Stage R-Squared		0.517			0.517			0.517	
First Stage F statistic (Kleibergen-Paap rk Wald)		9.518			9.518			9.518	
Controls for all specifications:									
Municipality Fixed Effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
Year of Allocation Fixed Effects	✓	✓	✓	✓	✓	✓	✓	✓	✓

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. Competition refers to political competition measured at the municipality level using the variable indicated in each panel (see the notes to Appendix Table A-3 and the main text for exact definitions). All competition measures are standardized. The measure of droughts refers to the number of months from 1950 to 1959 in which the monthly rainfall was strictly lower than the long-run average of each particular month, and therefore accounting for seasonality and non-expected periods of low rainfall. The number of events reflecting social and political discontent are counted during the period 1960-1969 using references to related events in two Mexican newspapers with national coverage: *El Universal* and *Excelsior*, further details in appendix A.1 Distance of *ejido* from municipal headquarters in panel A refers to the population-weighted minimum Euclidean distance of the *ejido* localities from the municipal headquarters (See Appendix Figure A-3 for details). The distance of *ejido* from municipal headquarters in columns 4,5 and 6 accounts for terrain by penalizing the minimum Euclidean distance in columns 1,2 and 3 when there are changes in altitude in the straight path that connects the localities within the *ejido* and their municipal headquarters (See Appendix Figure A-3 for details). The distance from the municipal headquarters via DCW roads in columns 7,8 and 9 accounts for the use of roads to reach the municipal headquarters. The trace of those roads comes from the Digital Chart of the World of 1992 and the overall distance of each locality from its municipal headquarters is computed adding up two different figures. First, the Euclidean distance from the locality to the closest point in a road that leads to the municipality head, and second, the length of the segment that connects such point to the municipal headquarters following the road path (See Appendix Figure A-3 for details).

Table A-13: Land quality and political competition: Is it about appeasing the opposition?

	(1)	(2)	(3)	(4)
Competition measured as:	Opposition vote share		Events of Social and Political Discontent	
Econometric Specification:	OLS	IV	OLS	IV
Panel A: Dependent variable: Agricultural constraints (FAO)				
Post-1960 × Competition	0.001	-0.038	0.002	-0.054
	(0.005)	(0.024)	(0.005)	(0.038)
Observations	15,855	15,855	15,855	15,855
R-Squared		0.616		0.663
Partial F		37.13		8.424
Panel B: Dependent variable: Land quality index (U.S/ Department of Agriculture)				
Post-1960 × Competition	0.029	0.070	0.003	0.098
	(0.050)	(0.138)	(0.036)	(0.196)
Observations	15,922	15,922	15,922	15,922
R-Squared		0.618		0.665
Partial F		36.72		8.926
Controls for all specifications:				
Municipality Fixed Effects	✓	✓	✓	✓
Year of Allocation Fixed Effects	✓	✓	✓	✓

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. 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. Panel A outcome was constructed using a seven-category measure of agricultural constraints from the Food and Agriculture Organization of the United Nations (FAO), which captures how easy it is to grow crops on that land. Panel B outcome is a nine-level index of inherent land quality from the US Department of Agriculture (transformed so that higher values indicate higher land quality). The regressions also control for the interaction of Post-1960 with the host of population, geographic and climatic municipal controls in Table A-7. See the notes for Appendix Table A-3 and the main text for exact definitions. All competition measures are standardized. The number of observations changes relative to those in baseline regressions as some covariates are not available for all *ejidos*. The IV columns instrument competition measures with the number of months with droughts during the 50s. The measure of droughts refers to the number of months from 1950 to 1959 in which the monthly rainfall was strictly lower than the long-run average of each particular month, and therefore accounting for seasonality and non-expected periods of low rainfall. The number of events reflecting social and political discontent are counted during the period 1960-1969 using references to related events in two Mexican newspapers with national coverage: *El Universal* and *Excelsior*, further details in appendix A.1

Table A-14: Distance from municipal headquarters and political competition: Is it about isolating insurgents and potential opposition?

Dependent variable: Distance of *ejido* from municipal headquarters			
	(1)	(2)	(3)
	Competition measured as		
	Opposition vote share	Events of Social and Political Discontent	Reduced Form
Panel A: Social capital in 1994			
Post 1960 × Competition	3.54**	3.03**	2.41**
	(1.54)	(1.50)	(1.03)
Post 1960 × Social capital in 1994	-0.02	0.57	0.17
	(0.86)	(0.95)	(0.47)
Post 1960 × Competition × Social capital in 1994	-0.27	-0.54	-0.15
	(0.48)	(0.38)	(0.52)
Observations	17,059	17,239	17,298
R-squared	0.58	0.58	0.58
Panel B: Population density in 1960			
Post 1960 × Competition	3.54***	3.01***	1.48**
	(1.16)	(1.03)	(0.64)
Post 1960 × Population density in 1960	-0.08***	-0.08***	-0.08***
	(0.01)	(0.02)	(0.02)
Post 1960 × Competition × Population density in 1960	-0.02	-0.02	-0.05*
	(0.02)	(0.02)	(0.03)
Observations	17,059	17,239	17,298
R-squared	0.58	0.58	0.58
Panel C: Population in the municipal headquarters in 1960			
Post 1960 × Competition	2.40**	1.96*	1.99**
	(1.10)	(1.00)	(0.96)
Post 1960 × Population in the municipality head in 1960	0.70	0.84*	1.19***
	(0.43)	(0.44)	(0.43)
Post 1960 × Competition × Population in the municipality head in 1960	0.42	-0.25	0.18
	(0.54)	(0.34)	(0.35)
Observations	17,059	17,239	17,298
R-squared	0.58	0.58	0.58
Controls for all specifications:			
Municipality Fixed Effects	✓	✓	✓
Year of Allocation Fixed Effects	✓	✓	✓

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. Panel A analyzes heterogeneity by social capital, which is calculated as the first principal component (explaining 70% of the variance in the data) of the municipality's number of human rights organizations, popular fronts, and peasant organizations in 1994. Panel B considers heterogeneity by the municipality's population density in 1960. Panel C explores heterogeneity by the population of the municipal headquarters in 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 municipal headquarters in 1960 so that the double interactions can be interpreted as the corresponding effects at the mean. All competition measures are standardized. Column 3 present the result of using the measure of droughts instead of the variables of competition. The measure of droughts refers to the number of months from 1950 to 1959 in which the monthly rainfall was strictly lower than the long-run average of each particular month, and therefore accounting for seasonality and non-expected periods of low rainfall.