

Land Reform and Land Invasions in Brazil*

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Abstract

When and how do elites organize to protect themselves against redistributive threats amidst democratic change that challenges them? Existing literature offers a host of plausible mechanisms such as lobbying and malapportionment that emphasize formal rule changes in safeguarding elite interests. This paper examines how extra-institutional organization by elites can forestall redistribution by making the implementation of formal redistributive laws difficult. It does so in the case of Brazil, a large, rapidly modernizing democracy with an increasingly strong state and extremely high levels of inequality. Using municipal-level data from Brazil's massive land reform program from 1988-2008, we demonstrate that while isolated threats to landed elites in the form of land invasions are difficult to repel, landowners are able to successfully resist land invasions when broader local threats catalyze them to organize. The findings suggest that even absent propitious conditions for protecting their interests such as asset mobility and biased formal rules, powerful elites can effectively carve out enclaves of disproportionate influence despite democratization.

*This paper is a draft prepared for the **37º Encontro Anual da ANPOCS** held in Águas de Lindóia, SP, Brazil, September 23-27, 2013. The data and computer code necessary to replicate the results and figures in this analysis will be made publicly available upon completion of the paper.

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1 Introduction

Influential recent literature on democratization and redistribution suggests that transitions to democracy should be followed by redistribution that favors the poor (Acemoglu and Robinson 2006, Boix 2003). However, a host of recent studies have shown that elites are able to protect themselves under democracy, either through lobbying (Acemoglu and Robinson 2008), manipulation of the vote (Ziblatt, 2009), or rules biased in their favor (Albertus and Menaldo, 2103). Low asset specificity and integration into the global economy further ease the likelihood of punitive redistribution by providing elites with a plausible threat of exit from the economy, thereby taming the state's capacity and desire to soak elites for the benefit of the poor (Boix 2003, Freeman and Quinn 2012).

Yet even absent some of these propitious conditions for protecting their interests, powerful elites have effectively carved out enclaves of disproportionate influence in many cases of democratization (e.g. Gibson, 2005). Furthermore, with the exception of "exogenous" factors that impact the capacity for redistribution such as asset mobility, elites must organize to win favorable conditions for self-protection.

When and how do local elites organize to protect themselves against redistributive threats amidst macro institutional change that challenges them? This paper examines the case of Brazil, a large, rapidly modernizing democracy with an increasingly strong state and extremely high levels of inequality. Notwithstanding some of the pro-poor reforms of the recent decade such as Bolsa Familia (Hunter and Sugiyama, 2009), education reform (Ceneviva, 2012), and health reforms (Falleti, 2010), large-scale redistribution in Brazil across the range of economic sectors has not materialized. Furthermore, those elites predicted by nearly all recent theory to be the biggest losers during democratization – landowners – have arguably fared the best.¹ The Gini for landholding inequality in Brazil in 2006 was an

¹Business elites have also fared well (Payne 1992), an outcome more consistent with existing theoretical expectations.

incredible 0.857, exactly the same figure as in 1985. In addition, many state subsidies and credits favor landowners (Carter, 2010).

How have large landowners protected their interests despite major institutional reforms? Consistent with recent work demonstrating that elites can protect their interests throughout democratization, we find that landed elites successfully pushed for safeguards to their de facto power during democratization via constitutional provisions that protected private property and malapportionment biased in favor of rural areas (Payne, 1992). The disproportionate influence of landowners in Congress, and the *bancada ruralista* in particular (Carter, 2010), have successfully repelled major changes of property rights and land access.

Yet large landowners and other elites in Brazil cannot always rebuff targeted efforts at redistribution. Popular and partisan pressure for land redistribution has increased, particularly from Brazil's landless movement, or MST (Brown, Brown and Donaghy, 2011). Land redistribution has dramatically increased in response. Widespread but targeted land invasions often force the expropriation and transfer of private land to squatters (Hidalgo et al., 2010). Furthermore, judicial evictions of squatters participating in land invasions are often ignored (Ondetti 2008). As a result, landed elites that recognize an imminent and evident local challenge to their hegemony in the countryside must quickly coordinate to forestall change.

Using data from Brazil's massive land reform program, we demonstrate that while isolated threats to landed elites in the form of land invasions are difficult to repel, landowners are able to successfully resist land invasions when broader local threats catalyze them to organize. During the period 1988-2008, there were nearly 8,000 land invasions in rural areas - staged by several million individuals - and 1,000 killings of peasants and peasant leaders (CPT, 2008). At the same time, Brazil's National Institute of Colonization and Agrarian Reform (INCRA, 2011) transferred nearly 70 million hectares of land, an area equivalent to the size of Texas, to 750,000 families.

Land reform allocation in Brazil, as in neighboring Colombia and many other cases (Albertus and Kaplan 2013), is a demand-driven process. The state responds to land invasions and rural land pressure with expropriation and redistribution rather than leading the process by targeting unproductive land and building a land bank for qualified petitioners. While this legal framework protects large landowners from broad, state-initiated land redistribution, the process nonetheless creates incentives for rural conflict and land threats in the form of land invasions. Land invasions are typically well-organized and pre-planned incursions into large, unproductive estates by landless or land-poor agrarian workers (Hidalgo et al., 2010). As a result, we find that *ad hoc* invasions in municipalities with high landholding inequality are difficult for large landowners to protect against. But because land grants respond to invasions and therefore incentivize them (Alston, Libecap and Mueller, 2000), there are substantial spillover effects whereby successful land reforms in a region lead to further land invasions in neighboring areas. These broader threats are more easily perceived and defended against. We therefore find that land invasions are less likely to occur in municipalities with higher landholding inequality that are surrounded by reforms in neighboring municipalities.

Key reform characteristics and additional empirical tests enable us to demonstrate that these findings are causal, and that they capture the key mechanism of landowner organization. In order to address potential endogeneity, we make use of the fact that some states have the capacity to grant tracts of public land to the landless, and that these grants should not spur land invasion spillover effects in neighboring municipalities across state borders. To demonstrate that landowner organization is the key mechanism repelling land invasions when regional reforms threaten to spill over, we provide evidence that unequal municipalities under threat of land invasion are likely to lose vote share for the PT, the party most closely affiliated with land reform. Consistent with Brown et al. (2011) we argue that this effect is due to the ability of landowners to avail clientelism in suppressing and swaying potential PT votes.

The remainder of the paper proceeds as follows. The second section details the extant literature on landholding, land reform, and conflict in the rural sector, and develops an argument about the political conditions that forestall systematic reform in democracies such as Brazil. The second section also discusses why and how *ad hoc* reforms that substitute for broader change require a different repertoire of elite action to locally subvert the implementation of formal laws. The third section details the history of land reform and rural conflict in Brazil. The fourth section describes the research design and data, and the section that follows details the empirical results.

2 Landholdings, Land Reform, and Rural Conflict

The large body of scholarship on redistribution provides several key predictions regarding the political conditions conducive to progressive reform. One particularly influential argument comes from social conflict theory. Social conflict theory anticipates that democracies should be more likely than autocracies to redistribute (e.g. Acemoglu and Robinson, 2006; Boix, 2003). Rooted in Meltzer and Richard's (1981) median voter model of tax rates, the theoretical prediction is that majority rule empowers poorer citizens to translate their preferences into policies that favor them over the oligarchy. Highly unequal democracies should therefore witness higher rates of redistribution. Furthermore, because capital mobility enables urban elites to evade redistribution (e.g. Freeman and Quinn, 2012), those holding more illiquid assets such as land should be the chief targets of redistribution (Boix, 2003). Politicians seeking the support of rural voters will therefore pursue land reform to gain the backing of the countryside (Lapp, 2004).

Beyond the degree of inequality and asset mobility, partisanship in the form of social democratic parties (Iversen and Soskice, 2006) and strong unions (e.g. Korpi, 1983; Stephens, 1986) are linked to higher rates of redistribution in the OECD context. Although partisanship

has little explanatory power over redistribution in many developing countries (e.g. Huber et al. 2008), the recent strengthening of the left in more developed states in Latin America such as Brazil has deepened the political capacity to implement reform.

Despite the implications these theories have for land reform in modernizing countries such as Brazil, land reform is far overpredicted. Not only did landed elites succeed in lobbying for constitutional provisions upon democratization to protect the bulk of their holdings (Payne, 1992), they have also been able to rebuff deepened reform under the progressive workers' party (*Partido dos Trabalhadores*, PT). As a result, landholding inequality in Brazil, one of the most unequal countries in the world, has remained nearly constant under democracy. According to census figures, the Gini coefficient of landholding was 0.857 in 1985, 0.856 in 1995, and 0.857 in 2006.

Part of the explanation for how landed elites have prevented large-scale change rests in their ability to disproportionately amplify both their formal representation in Congress, via elite-biased rules such as malapportionment (Carter 2010, Payne 1992), and their informal representation, via lobbying and campaign financing (Samuels 2002). This is consistent with a host of recent literature on how elites can win favorable changes in formal rules amidst democratization (e.g., Acemoglu and Robinson 2008, Albertus and Menaldo 2013).

Yet landed elites have not been able to block all change. Indeed, there is an active land reform program that has settled 800,000 families on 70 million hectares from 1988-2010. This program routinely targets the property of large landowners for redistribution. How do landed elites then prevent the local implementation of the land reform law in spite of the legal machinery created to guide redistribution? And how has this resulted in the apparent failure to reduce rural inequality?

Land reform allocation in Brazil is a demand-driven process. The state responds to land invasions and rural land pressure with expropriation and redistribution rather than leading the process by targeting unproductive land and building a land bank for qualified

petitioners. This framework protects large landowners from broad, state-initiated land redistribution. Nonetheless, it simultaneously creates incentives for rural conflict and land threats in the form of land invasions (Alston et al. 2000). That the program encourages conflict parallels the outcomes of several other prominent land reforms. In Colombia, for instance, land titling in conflictive rural areas led to spillover effects in which nearby communities recognized the need to support rebel groups in order to garner the attention of Colombia's land reform agency (Albertus and Kaplan, 2013). And in Russia following the emancipation of serfs in 1861, land-based rural rebellion actually increased as landlords hijacked the reform implementation process to win favorable land allotments (Finkel, Gehlbach and Olsen, 2012).

The nature of the threat of land-based conflict and land redistribution requires local, extra-institutional organization by elites attempting to avoid losing their property. Land invasions are typically well-organized and pre-planned incursions into large, unproductive estates by landless or land-poor agrarian workers (Hidalgo et al. 2010). These ad hoc invasions, which target more unequal municipalities given the supply of land for potential reform, are therefore difficult for large landowners to protect against. But because land grants respond to invasions and therefore incentivize them, there should be substantial spillover effects whereby successful land reforms in a region lead to further land invasions in neighboring areas. These broader threats are more easily perceived and defended against where local landed elites are stronger and can organize to repel invasions. As a result, spillover effects of reform are less likely to occur in more unequal municipalities.

This leads to the following set of hypotheses:

Hypothesis 1 *Land invasions are more likely to occur in municipalities with higher landholding inequality.*

Hypothesis 2 *Land reforms in the region surrounding a municipality are more likely to spur invasions in that municipality. This effect should be reversed in municipalities with high inequality where elites are well organized to repel evident threats.*

Identifying the causal direction of the relationship between land invasions and land reforms presents an empirical challenge. To determine the effect of land reforms on subsequent land invasions, we use the fact that only some states use public lands to satisfy demands for land redistribution. While public land grants have the potential to increase the risk of subsequent land invasions in neighboring municipalities within the same state, we should observe no such spillovers across state borders. Land invaders learn little about authorities' political willingness to grant public land in their state (if they even have the constitutional authority to do so) from a neighboring state's proclivity to use public land for reforms. In contrast, federal land grants using expropriated private lands should spill over across state borders within the geographical neighborhood because land invaders can reasonably expect to have a higher chance of such grants, even if located in a different state.

In order to test our claim that land reforms spur additional land invasions later on, we formulate the following hypotheses:

Hypothesis 3a *Land reforms based on expropriated private land increase the likelihood of land invasions in neighboring municipalities.*

Hypothesis 3b *Public land grants increase the likelihood of land invasions in neighboring municipalities only within the same state but not across state borders.*

INCRA, Brazil's federal land agency, predominantly employs expropriated private land to satisfy the demands for land redistribution voiced through land invasions. In contrast, state led reforms are based almost entirely on the redistribution of public land already in state hands. Given these diverging modus operandi of federal and state reform agencies, we can formulate an analogous set of hypotheses capturing the different expectations for spatial spillovers:

Hypothesis 4a *Federal land reforms increase the likelihood of land invasions in neighboring municipalities.*

Hypothesis 4b *State land reforms increase the likelihood of land invasions in neighboring municipalities only within the same state but not across state borders.*

If land reforms based on expropriated vs. public lands do indeed spill over differently to neighboring municipalities, we would also expect a different response by private land owners. From the perspective of a landowner worried about potential land invasions on their property, expropriations in the surrounding region are a threat to their own land holdings via spillovers. In order to measure – beyond Hypothesis 2 – whether local landowners respond to the challenge posed by potential land invasions spurred by past reforms, we turn to electoral results. In Brazil, the political party most clearly associated with support for land reform is the Workers’ Party (PT). If landowners are able to organize effectively against the threat of land invasion, we would expect the PT vote share in gubernatorial and presidential elections to decline following expropriations in neighboring municipalities. However, such an imposition of the landed elite’s political preferences on the electorate can only be expected in municipalities where landowners have sufficient control: places where land inequality is already high (Brown et al. 2011). In less unequal municipalities, where land owners likely wield less power on the electorate, we expect that support for the PT increases following expropriation-based reforms in the region.

Hypothesis 5a *Expropriations in the region are likely to reduce the electoral support for the PT in highly unequal places, and increase the PT’s vote share in municipalities with more equal landholdings.*

In contrast, land reforms based on the recognition of claims on public lands do not pose a threat to the private property of landowners. Indeed, public lands reforms help to relieve redistributive pressures from landless agrarian workers in more unequal municipalities and thereby lower the risk of expropriation of private lands. Landowners in these unequal places should have little need to organize against PT political representation in the presence

of public land grants. At the same time, land grants (including public grants) are politically popular with voters where land inequality is high, which should increase PT support (Brown et al. 2011). In municipalities that are already relatively equal, the support for land reform is less clear-cut. While landowners should not oppose these reforms, neither is it likely that the PT can garner substantial sympathy for their cause.

Hypothesis 5b *Public land recognitions in the region should increase electoral support for the PT in municipalities with high landholding inequality.*

The next section provides some additional historical background about Brazil's land reform program before turning to the empirical section to test the hypotheses formulated above.

3 Land Reform in the Brazilian Context

Rural poverty, a highly unequal distribution of land, and informal land ownership have been salient issues in Brazil and Latin America more broadly since the creation of massive estates and trusts during colonization. Shortly after arriving to Brazil, the Portuguese divided the territory into 15 large tracts of land with hereditary succession rights. Large plantations (*sesmarias*) were subsequently granted to settlers who produced cash crops such as sugar, cocoa, and coffee largely using African slave labor (Frankema, 2006). From the time of Brazil's independence (1822) until 1850, there was no land law regulating land access and use. This encouraged widespread squatting and land claiming in frontier areas by large landowners who sought to expand their holdings (Alston, Harris and Mueller, 2012). Law 601 of 1850 gave *de jure* status to existing *de facto* holdings, legitimized pre-independence imperial land grants, and mandated that future land had to be acquired through purchase rather than squatting. Coffee elites nonetheless continued incorporating frontier land through squatting at a large scale (Alston, Harris and Mueller, 2012, 762).

When Brazil became a republic in 1889, large landowners gained substantial influence over state-level land policy. Most states adopted legislation that mirrored the 1850 Land Law, legally prohibiting squatting but in practice enabling large landowners to incorporate more frontier lands (Osório 1996). As Alston, Harris and Mueller (2012, 763) write, "Local oligarchies dominated access to land and power in their regions, usually through the figure of the all-powerful coronel who presided with feudal-like rights and reigned through a mixture of paternalism and violence, strengthened by his association to central state politicians to whom he could deliver votes." Although conflicts occasionally arose between landowners and laborers who squatted on marginal lands, the overwhelming power of large landowners resulted in little widespread violence.

Nascent industrialization under Vargas in the 1930s posed the first major challenge to rural elites, who began to be displaced in national prominence by urban elites. The 1946 Constitution included for the first time a provision for land expropriation in the social interest, although it was not employed. Colonization programs were the principle axis of land policies in the 1950s. In the late 1950s the Peasant Leagues movement arose among poor tenant farmers in the sugarcane region of Pernambuco, and subsequently spread to other states. Another movement arose in Rio Grande do Sul. These groups called for "radical" agrarian reform and threatened violence if reform was not implemented (Ondetti, 2008, 11). In 1961 João Goulart, a left-leaning populist and protégé of Vargas, became president. His agenda incorporated agrarian reform but shifted the debate from colonization toward redistribution, and he gave rural workers the right to unionize through the Rural Worker Statute of 1963. His attempts, however, were stymied by powerful landowners in Congress. Goulart was overthrown in a military coup in 1964.

Land reform in Brazil began under military rule with the Land Statute and the creation of the Brazilian Institute for Agrarian Reform (IBRA) and the National Institute for Agricultural Development (INDA) in 1964. These institutions were intended to undercut

pressure for land redistribution levied by social movements such as peasant leagues (Assuncao, 2006). They nonetheless focused primarily on land colonization and the modernization of large landholdings to enhance productivity and bolster agricultural exports. In 1971, IBRA and INDA were merged into the National Institute for Rural Settlement and Agrarian Reform (INCRA), which is still active today.

INCRA is a federal agency subordinated to the Agrarian Development Ministry, which itself is subordinate to the executive. The head of INCRA is appointed by the Minister of Agrarian Development, who in turn appoints the regional officers of INCRA's 30 regional offices. These offices are distributed throughout Brazil's 26 states, with at least one regional office per state, and two where a state is exceptionally large or on the active frontier of land settlement. This structure impels INCRA to work with Brazil's powerful governors to identify land for potential reform via the provision of cadastral information, use local police address land invasions, and enforce its land reform decisions.

Land occupations and other forms of social protest emerged in the late 1970s and early 1980s. The MST began at this time as small groups of farmers in Brazil's south occupied unproductive lands (Brown et al. 2011). The group pledged to reduce inequality through the transfer of land to peasants in rural areas at its first national conference in 1984. The next year, the military handed over power. The MST burgeoned in subsequent years and has now spread across the country.

Under popular pressure from social movements and against a backdrop of rural violence, Sarney made agrarian reform a priority at the outset of his administration. Agrarian reform was nonetheless stifled during his term as landowners pressured for a focus on incorporating public rather than private land into the reform sector, and an increase in compensation. The first director of INCRA under Sarney, José Gomes da Silva, resigned in protest of the gutting of the reform. Landowners were simultaneously organizing to defeat land reform proposals in the Constituent Assembly. Landholding interests in the National Confedera-

tion of Agriculture, the state Federations of Agriculture, and the Brazilian Rural Society joined in 1986 to form the Union of Rural Democracy (UDR) in the Constituent Assembly (Payne 1992, 15). The UDR successfully pushed for a provision in the 1988 Constitution that protects productive private property from expropriation.

Collor (1990-1992) continued policies that benefitted large landowners. Although his campaign platform included the elimination of the ban on expropriating productive property, he appointed Antonio Cabrera Filho – a wealthy cattle rancher and member of the UDR – as his Minister of Agriculture. Little land was expropriated during his tenure.

Land reform resumed with Collor's impeachment. A February 1993 amendment to the Constitution stipulated that the government pay "market price" for land it expropriates (Assuncao 2006, 8). Reform accelerated under Cardoso, but decreased during his second term as INCRA's strategy shifted to one of "negotiated land reform" (Deininger 1999). Land conflicts and land invasions, primarily associated with the Landless Workers' Movement, also increased during Cardoso's tenure. Between 1995 and 2002, Cardoso redistributed 21 million hectares of land through 4,300 decrees, of which 16 million hectares were expropriated. From 2003 to 2010, President Lula da Silva expropriated 16.5 million hectares of land. However, Lula increased land purchases and colonization through INCRA, negotiating the transfer of 27 million hectares of land from 2003-2008 compared to 5 million hectares under Cardoso from 1995-2002 (INCRA, 2011).

Land reform in Brazil since its democratic transition has been largely reactive. As Carter (2010, 19) summarizes: "[Land reform] has strived mainly to appease rural conflicts, rather than promote family farming through proactive measures aimed at transforming the rural structure and its power relations. By treating agrarian reform as an isolated problem, of marginal interest to the nation's development, all governments have engaged in an ad hoc distribution process, offering land in places convenient to the state and landowning elite. As a rule, all governments have shied from taking measures that would confront or upset

Brazil's dominant rural forces: its large landholders and agribusiness conglomerates." Yet while landowners have avoided the worst-case scenario of large-scale redistribution, they have not halted a land reform program that is increasing in scope and that incentivizes land invasions that target large landowners. Landowners essentially uniformly seek to avoid the disruption, legal battles, and expropriation that may result from invasions of their property. Consequently, large landowners seek to organize and coordinate to repel imminent threats of land invasions and subsequent expropriation by INCRA.

4 Research Design and Data

The analysis seeks to examine the determinants of threats to landed elite interests in the form of land invasions. It also analyzes one primary outcome of elite organization amidst threats: suppression of PT vote share.

4.1 Dependent Variables: Land Invasions and PT Vote Share

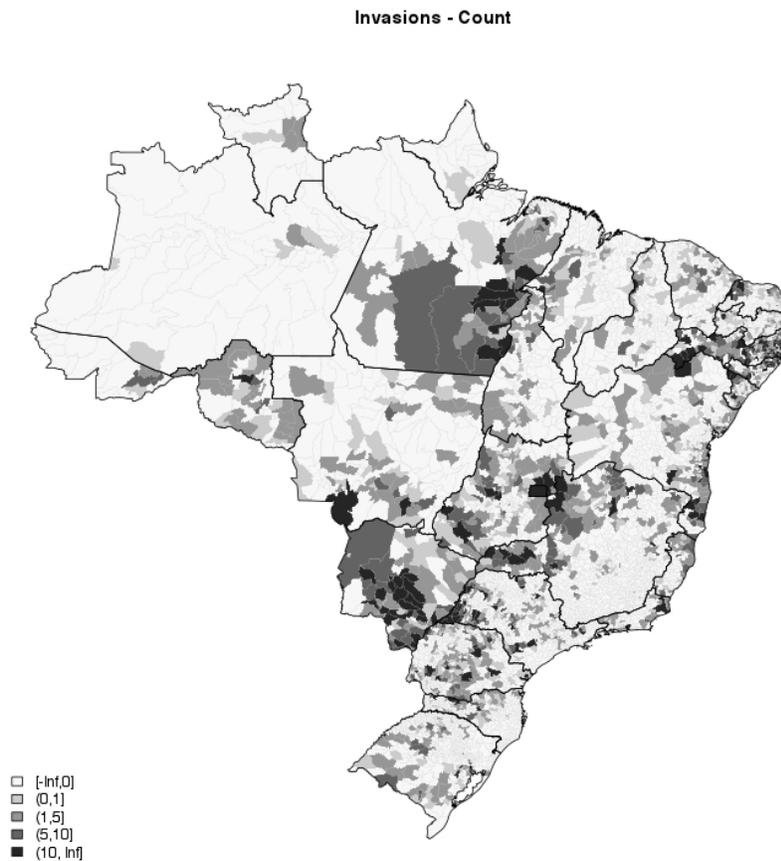
The first dependent variable is land invasions, measured as the number of distinct land invasions that occur in each municipal-year in Brazil from 1988-2008. Data on land invasions are taken from the Pastoral Land Commission (*Comissão Pastoral da Terra*, CPT) and Dataluta, a database on land conflicts hosted by São Paulo State University (UNESP).

The CPT, an NGO with ties to the National Conference of Bishops of Brazil, collects data on land invasions from primary sources such as social movements, trade unions, political parties, government agencies, and churches. It also gathers data from local, state and national newspapers, police records, and government agencies. The CPT is consequently viewed as the most comprehensive and authoritative source of data on land invasions.²

²In case several conflicts occur on the same property, CPT considers only the figures of the last action that took place in that specific property and counts the biggest number of that were involved in the conflict to avoid duplication of data.

The CPT records a total of 7,939 land invasions from 1988-2008 (see figure 3). In addition to the number of invasions, the CPT also records the number of families that participated in each invasion. Over 1.1 million families participated in land invasions during the period. Considering the size of these families, several million individuals participated in land invasions over this period. Spatially, land invasions have occurred at the fringes of Brazil's continuing urban expansion, with most land invasions in the states of Minas Gerais, São Paulo, and Rio Grande do Sul (see 1).

Figure 1: Land Invasions in Brazil, 1988-2008



Note: Data on land invasions are from the Comissão Pastoral da Terra (CPT).

The second dependent variable is the vote share of the *Partido dos Trabalhadores*

(PT). Brazil’s worker’s party has been an historical ally of the Brazil’s landless workers movement (MST) and other agrarian reform activist groups (Ondetti 2008)³. When landowners are threatened by land invasions, we consequently expect them to use their clout to reduce electoral support for the PT in their municipalities. We measure PT electoral support by the municipal level vote share of PT candidates in gubernatorial and presidential elections⁴.

4.2 Key Independent Variables

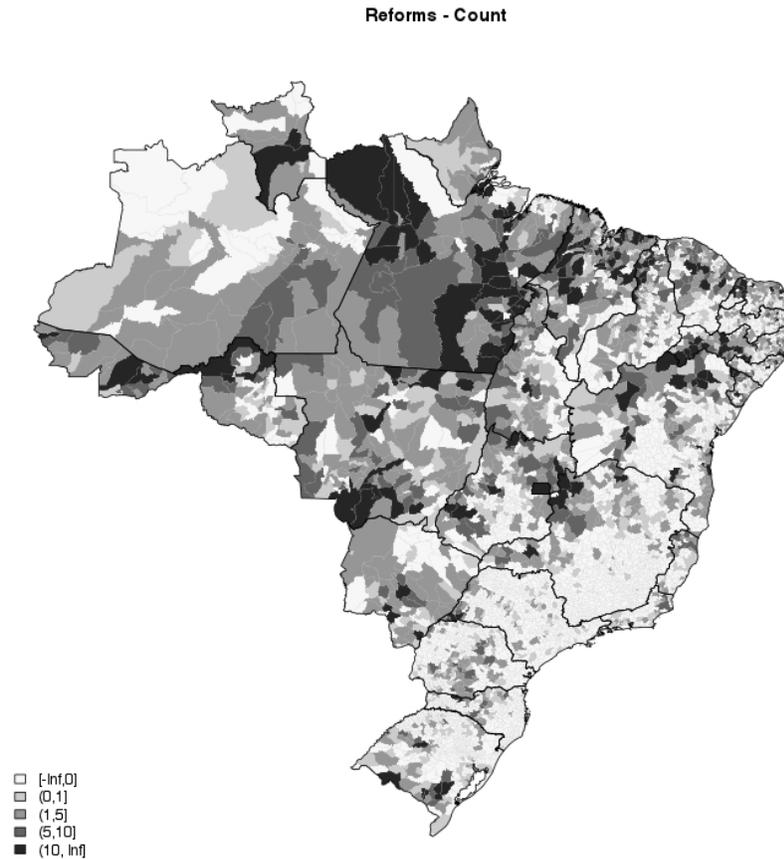
The first key independent variable is land reform. In addition to land invasions, the CPT collects data on the number, location, and size of land reforms, as well as the number of beneficiaries settled on a particular land grant. Land reform is carried out principally by the National Institute of Colonization and Agrarian Reform (*Instituto Nacional de Colonização e Reforma Agrária*, INCRA), though some land reform is also conducted by states. INCRA has thirty regional offices located throughout Brazil (with at least one per state) that gather information on the availability of land for potential reform, manage local land registries, and aid in the implementation of land reform projects. Regional officers are political appointees of Brazil’s president.

Land reform projects are primarily intended to meet the demands of the landless and land-poor rural population, who often organize to push for land reform via the MST. According to the CPT, INCRA conducted a total of 7,990 land reform projects during the period 1988-2008 (see Figure 3), benefitting 724,000 families over an area of nearly 70 million hectares. These data correspond closely to INCRA’s own data. INCRA counts 7,864 reform projects during this period, benefitting nearly 800,000 families over a range of 68 million

³The relationship between the PT and the MST was one of mutual support. The MST as an organization provided support for the party and the political campaigns of its candidates. Some of the landless movement’s founders in the South even joined the PT’s ranks and became successful PT politicians (Ondetti 2008, 127).

⁴The support for mayoral PT candidates is harder to measure consistently. In many municipalities, the PT either does not field its own candidate or forms part of a coalition of parties supporting one of the candidates in the race. By contrast, at the gubernatorial and especially the presidential level, PT candidates usually play a significant role, providing a consistent measure over time of support for the party by municipality.

Figure 2: Land Reforms in Brazil, 1988-2008



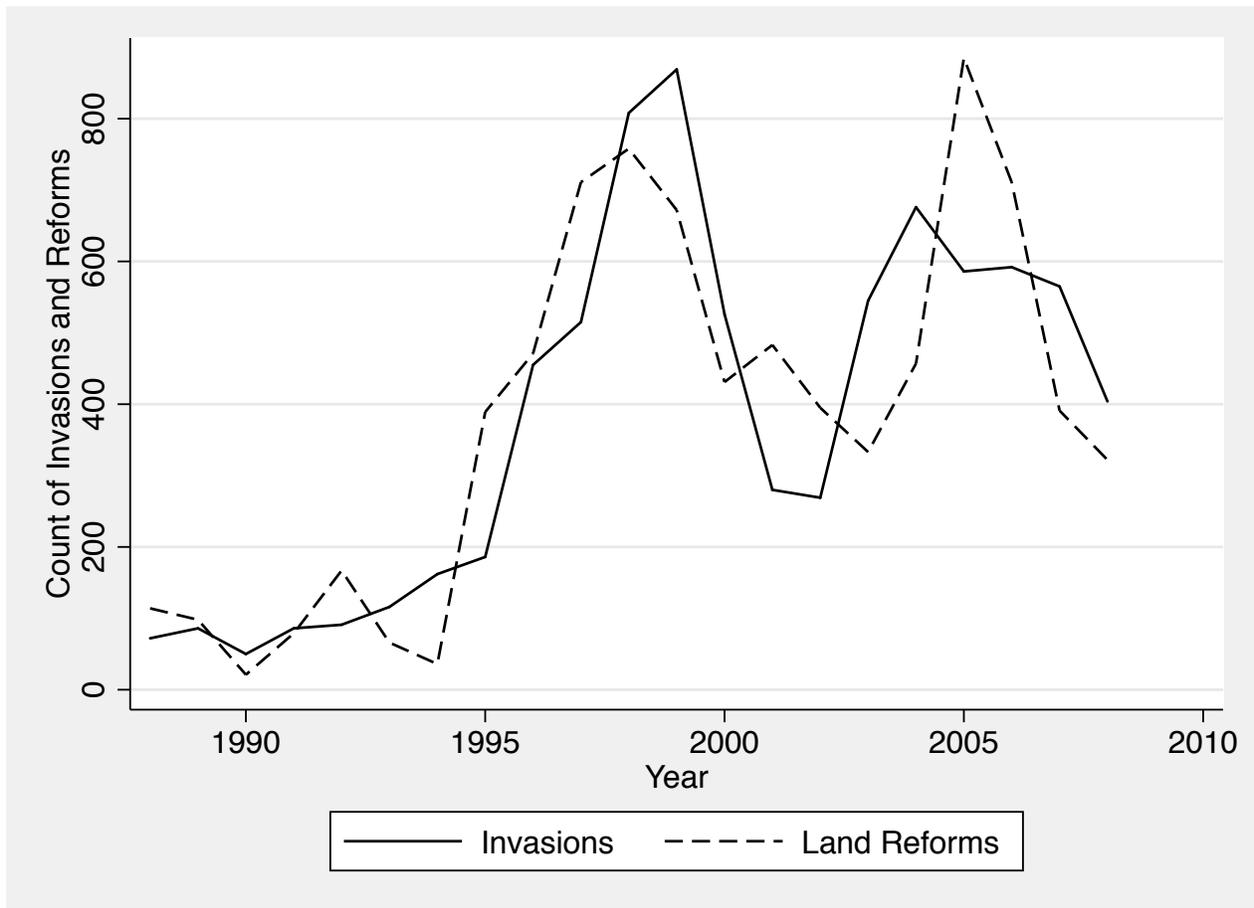
Note: Data on land reform are from the Instituto Nacional de Colonização e Reforma Agrária (INCRA).

hectares. Of INCRA's 7,864 reform settlement projects, 6,502 of these were carried out by the federal government.

The majority of land distributed through INCRA's land reform program is acquired through expropriation of private property. Under Brazil's 1988 Constitution, only unproductive land is subject to expropriation. A 1993 Constitutional amendment further requires that compensation for land seized must be at prevailing market rates, with enforcement subject to judicial review. Of INCRA's 7,864 reform projects from 1988-2008, a total of 5,680 set-

tlements (72%) were created on expropriated private land. The remainder of the land came from transfers from other state agencies (4%), negotiated purchases from the private sector (6%), and the recognition of settlements on public lands (18%).

Figure 3: Land Invasions and Land Reforms in Brazil (1988-2008)



Spatially, land reforms match the distribution of land invasions fairly well (see Figure 2). Land invasions have significantly outpaced land reform efforts in areas with the greatest pressures to reform, such as the states of Minas Gerais, São Paulo, and Rio Grande do Sul. In the Amazonian states of Brazil's Northwest, large tracts of land have been offered for settlement, but have met much less demand.

Land reform grants in Brazil are commonly granted following an earlier land invasion.

Similarly, existing land reform projects are likely to affect the calculations of landless agrarian workers and increase the risk of land invasions nearby. To identify the causal direction of the relationship, we rely on differential diffusion patterns of different types of land reforms. Land grants based on publicly owned lands, usually executed directly by state governments, may spur additional invasions in the same state but are unlikely to affect neighboring municipalities across state borders where the process for public land grants is run independently. Furthermore, in some states there is simply no mechanism for the state government to distribute public land. By contrast, land reform projects based on expropriated private land and overwhelmingly implemented by the federal land agency INCRA, should exhibit no such border effects. To test our claim, we calculate the number of these different types of reforms (expropriations vs. public recognitions, state vs. federal) in a 100km radial region around a municipality, separately for in-state and out-of-state neighbors. The differential patterns of these spillovers allow us to identify the causal relationship between land invasions and land reforms.

We contend that particular types of reforms will affect private landowners differently. State-led reform projects based on public land recognition in neighboring municipalities should pose little threat to landowners and consequently elicit no organizational response. Indeed, such reforms act as a "pressure valve" that relieve land pressure on private owners. By contrast, expropriation-based reforms in the region increase the threat of additional land invasions. In highly unequal municipalities, in which landowners are better organized, we expect landowners to organize against such looming threats and be better able to repel potential land invasions. In more equal places, landowners may find it harder to organize, and thus more often will succumb to the threat of land invaders.

The second main independent variable is land inequality. Land inequality, which may impact where land invasions and land reform are targeted, is taken from IBGE's agricultural censuses of 1995 and 2006 and measured using a Gini coefficient. Missing years of data dur-

ing the period are interpolated. After 25 years of democratic rule, land holding inequality in Brazil remains stubbornly high. Even in areas where land reform has already taken place, average land holding inequality has often barely changed, oftentimes driven by the growth of large agribusiness farming large monocultures of sugarcane or soybean. As emphasized by Hidalgo et al. (2010), the relative stasis of land inequality eliminates concerns of endogeneity running between land inequality and land invasions. High land holding inequality has traditionally been associated with patrimonial agrarian oligarchs controlling the countryside through personalistic patron-client relationships, a phenomenon called *Coronelismo* (Leal 1975). In our empirical analysis, we use land holding inequality as both an indicator of the popular demand for land reform as well as the strength of political control of land holding elites.

4.3 Controls

The models include a series of other time-varying determinants of land invasions whose omission may confound the results. The percentage of the rural population, taken from the Brazilian Institute of Geography and Statistics (IBGE), is measured as the percentage of a municipality's population that is rural and taps the importance of agrarian reformation (Huntington 1968). Income per capita, measured in thousands of constant log 2000 Reais and taken from IBGE, taps local development and may capture the demand for land reform or the capacity to implement local reform. Change in log income per capita, included in the models predicting land invasions, captures the possibility that negative economic shocks spur invasions (Hidalgo et al. 2010). We also include a variable for agricultural production in millions of constant log 2000 Reais from IBGE. Agricultural value may affect invasions or reform since an unproductive agricultural sector is often a reason for reform (Dorner, 1992) as well as a supply of land for potential reform.

The models also include a cumulative measures that taps the history of reform in

a municipality. The cumulative measure of land reform captures the cumulative number of past land grants, which may either encourage further land invasions or diminish the number of encampments prepared to invade land.

Summary statistics of the variables used in the analyses are found in Table 1.

5 Empirical Analysis: Land Invasions and Land Reform

The main dependent variables of interest are the number of land invasions and land reform grants. While the Brazilian land reform program has been an enormous effort involving millions of people and distributing millions of hectares of land, the majority of municipalities in Brazil never experience a land invasion (71%) or a land reform (65%), leaving 96 percent of municipality-years with no event⁵. In addition, we suspect that the incidence of previous invasions potentially increases the probability of additional invasions to follow. To account for the substantial heterogeneity across municipalities as well as the potential for time-dependency, we estimate negative binomial regressions for all count data.

For invasions and reforms Y_{it} occurring in year t in a particular municipality i , we thus estimate

$$Y_{it} = \mathbf{X}_{it}\beta + \alpha_i + \delta_t + \epsilon_{it} \tag{1}$$

where \mathbf{X}_{it} is a matrix of time-varying independent variables, α_i are state fixed effects, and δ_t are year fixed effects, with a density following the negative binomial distribution (see Greene 2003, 745).

⁵On average, 7 percent of municipalities experience a land invasion or a land reform in a given year. However, there is substantial heterogeneity, with a maximum of 31 invasions and 21 land grants recorded in a single municipality-year.

5.1 Land Invasions

Estimations analyzing the determinants of land invasions are presented in Table 2. Consistent with social conflict theory, model 1 indicates that municipalities with high landholding inequality are substantially more likely to be targeted for land invasions. However, it is not the municipalities with large empty tracts of land in the Amazonian region in the Northwest of Brazil that experience most invasions. Instead, it is on the fringes of smaller urban areas where the interests of poor, landless families and rich, rural landowners collide. Invasions are more likely in municipalities with a substantial agricultural production (measured by the value of agricultural output), often dominated by large agribusinesses.

Providing landless families with land grants through land reform projects is politically oriented toward providing a pressure valve for landed conflict. However, in a demand-driven land reform process such as that which exists in Brazil, land invasions commonly respond to land grants by raising the expectations that direct action will yield benefits. As a result, past land reforms often encourage further invasions, as evidenced by the positive association between the cumulative number of previous land grants and additional invasions in the present.

Given this incentivization of further land incursions by past reforms, we also expect past reforms in the region to spur additional invasions.⁶ Model 2 supports this link. However, well-organized landlords in highly unequal places should be able to coordinate to repel these demands (Hypothesis 1). Model 3 of Table 2 indicates support for this claim. Previous, neighboring land reforms only encourage further invasions in equal places but have no such rippling effect extending to the most unequal municipalities. Plausible concerns about an endogenous relationship between land invasions and land reforms are addressed in Table 3.

Model 4 re-estimates model 3 with fixed effects for municipalities. Since many mu-

⁶The surrounding region across all regressions is defined by the set of all municipalities in a 100km radius. Reforms in the region are then the sum of all reform projects in the past year (or past several years for other indicated specifications) in those neighboring municipalities.

municipalities never experience a land invasion, more than 70% of all observations are excluded from that model. Predictably, some of the coefficients are reduced in significance or become insignificant. A fixed effect model restricts our sample to only include municipalities experiencing at least one land invasion. Municipalities in which there was either no demand for land redistribution or, more importantly, where landowners were able to repel such efforts, are excluded. Given the centrality of landowner's organizational capacity to our theory, we prefer models 1-3 using clustered standard errors at the municipality level to assuage concerns about omitted variables.

Model 5 uses the number of families participating in the land invasion as the dependent variable in order to ensure robustness to the possibility that spillover effects and landholding inequality are influencing the magnitude as well as simply the occurrence of land invasions. All results remain unchanged compared to the models with the count of invasions as the dependent variable.

Overall, we find that unequal, somewhat urbanized municipalities with substantial agricultural production and a reservoir of poor people are most likely to experience land invasions. Reforms in neighboring municipalities encourage invasions in more equal places, but there is no such spillover effect in highly unequal municipalities.

5.2 Spillover effects of land reforms

Land invasions do not only respond to land reforms; indeed, in many cases land reforms are a response to previous land invasions: "Land invaders are the principal beneficiaries of land redistribution" (Hidalgo et al. 2010, 3). In order to therefore identify the causal effect of past land reforms in the same municipality and its geographic neighbors, we need to address the possibility of endogeneity between land invasions and land reforms. Our empirical strategy employs the fact that some Brazilian states – mainly Acre, Maranhão, Mato Grosso, Piauí, Rio Grande do Sul, São Paulo – use public lands for land reform projects while in other

states the federal land agency INCRA is the dominant or sole provider of land grants. If land reforms in neighboring municipalities do indeed spill over by encouraging land invasions, such spillovers should be different depending on the type of reform.

Public land grants should only affect the likelihood of subsequent invasions within the same state. No such diffusion effects should be observed across state borders where the policy process for public land grants is run independently. Indeed, in some states there is simply no mechanism for the state government to distribute public land. By contrast, land reform projects relying on expropriated private land should exhibit no such differential effects across state borders. Public grants are overwhelmingly executed by the state governments themselves, and expropriations are commonly handled by INCRA. As a result, we can use these two separate classifications of land reform projects, (i) public grant vs. expropriation and (ii) state led vs. federal land reform, for our empirical identification strategy.

Table 3 presents the regression estimates of the spillover effects of land reforms on land invasions. In Models 1 to 3, we find support for Hypotheses 3a and 3b. Neighboring expropriations, both in the same state and across state borders, increase the risk of invasions. However, recognitions of public lands (land reforms based on public grants) only diffuse within state borders but do not increase the likelihood of invasions in other states. We interpret this as *prima facie* evidence that reforms indeed encourage additional invasions, but only if potential land invaders can reasonably expect to be the recipient of a land grant of the same type. Models 4 to 6 repeat the exercise, but now examine state vs. federal land reforms. As expected, we find consistent evidence that federal reforms encourage land invasions in-state and out-of-state, but state-led reforms only increase the likelihood of invasions within the same state and do not spill over to other states.

Overall, we find strong and consistent evidence that federal and expropriation based land reforms in the geographic neighborhood increase the likelihood of land invasions in a municipality. By contrast, state led reforms and public grants only have such effects on

municipalities within the same state.

5.3 Landowners' Organizational Response

Based on the evidence in Tables 2-3, reforms in the past and in geographically close municipalities encourage subsequent invasions by landless peasants. In Table 2, we find that landowners in highly unequal municipalities are able to reduce and even neutralize these threats of spillovers from neighboring reforms into potential invasions. Landowners in highly unequal places are able to better mobilize their organizational capacity to thwart the threat of invasions. One direct manifestation of landowners' capacity to organize is the ability to influence electoral outcomes. The Brazilian worker's party (PT) is the most ideologically committed party to support land reform and thus likely an easily identifiable opponent for landowners. We hypothesize that landowners in highly unequal municipalities are able to impose their preference against the PT if threatened by reforms in neighboring municipalities by reducing the electoral support for PT presidential and gubernatorial candidates.

Table 4 presents the regression estimates of the determinants of PT support in gubernatorial and presidential elections. Faced with a threat, landowners are able to reduce the support of PT candidates in subsequent elections in places with high landholding inequality. The sum of expropriation-based land reforms in the past 3 years before an election in neighboring municipalities unsurprisingly garners support for PT candidates, as evidenced by the positive coefficient on expropriations in the region in models 1 and 3. In contrast, in highly unequal places, land expropriations in surrounding municipalities decrease the support of PT candidates. We interpret this as evidence of the organizational capacity of landlords in these municipalities. As Brown et al. (2011) discuss, large landowners in unequal places are capable of using their clientelistic capacities to buy off, intimidate, and otherwise reduce the vote share of their political opponents.

Voting dynamics operate very differently when neighboring reforms are based on the

recognition of claims on public lands, as demonstrated in models 2 and 4. We focus on in state recognitions given the Table 3 findings that out of state recognitions do not have spillover effects. Neighboring recognitions in state do not threaten private property. To the contrary, they help to relieve land redistribution pressure in more unequal municipalities. Landowners in these unequal places should have little need to organize against PT political representation in the presence of public land grants. At the same time, land grants are politically popular with voters where land inequality is high, which should increase PT support (Brown et al. 2011). And indeed, models 2 and 4 indicate that recognitions in state bolster support for PT candidates. The findings for recognitions in state in equal municipalities is mixed. Whereas they reduce the vote share of PT candidates at the gubernatorial level, there is no measurable effect at the presidential level. While landowners should not oppose these recognitions regardless of whether they reside in equal or unequal municipalities, it is not clear whether or why such reforms should garner voter support for the PT in equal places.

6 Conclusion

This paper investigates when and how elites organize to protect themselves against redistributive threats amidst democratic change that challenges them. Whereas existing literature emphasizes how formal rules won by elite influence can safeguard their interests, this paper examines how extra-institutional organization by elites can forestall redistribution by making the implementation of formal redistributive laws difficult. It does so in one of the world's largest and most unequal developing democracies, Brazil.

From 1988-2008, several million individuals staged nearly 8,000 land invasions in rural areas. Using municipal-level data from Brazil's massive land reform program, we demonstrate that while isolated threats to landed elites in the form of land invasions are difficult to repel, landowners are able to successfully resist land invasions when broader local threats

catalyze them to organize. The land reforms most likely to spur spillover land invasions in neighboring municipalities are cauterized where land inequality is high. Landed elites in these municipalities coordinate to counteract potential invasions. They also exert their influence, most likely via clientelism, to suppress electoral support for the PT – the party most closely connected to land reform – in these municipalities.

The findings suggest that even absent the most propitious conditions for protecting their interests such as asset mobility and biased formal rules, powerful local elites can successfully carve out enclaves of disproportionate influence amidst democratization. Ironically, this has arguably been most effective for those elites commonly believed to be the biggest losers in democratic transitions: large landowners. Landed elites reign supreme over the countryside in countries as diverse as Argentina, Colombia, South Africa, and the Philippines. This paper takes the first steps toward examining why this is the case, and in the process offers a generalizable mechanism for how elites can protect their core local interests amidst macro-institutional change.

Table 1: Descriptive Statistics

Variable	Mean	Std. Dev.	Min.	Max.	N
Land Invasions	0.07	0.5	0	31	116823
Land Invasions (Families)	9.58	99.90	0	12540	116823
Land Grants	0.07	0.44	0	21	116823
Land Grants (Families Settled)	6.19	62.2	0	3719	116823
Land Grant Area	594.59	17455.33	0	2450381	116823
Cumulative Land Grants	0.58	2.1	0	75	116823
Cum Families Settled (Hnds)	0.56	2.59	0	62.67	116823
Percent Rural	0.43	0.24	0	1	98562
Land Inequality (Gini)	0.71	0.12	0	0.99	11017
log(Agricultural Production)	8.21	1.63	-1.11	14.59	107485
log(Income Per Capita)	5.05	0.69	2.54	7.33	115605
Δ log(Income Per Capita)	0.07	0.05	-0.15	0.62	110266
PT Vote Share for Governor	0.14	0.15	0	0.93	81049
PT Vote Share for President	0.34	0.18	0.01	0.93	81033
Neighboring Reforms	2.33	4.56	0	81	116823
Neighboring Expropriations	1.67	3.62	0	78	116823
Neighboring Recognitions	0.4	1.79	0	44	116823
Neighboring Federal Reforms	1.89	3.9	0	79	116823
Neighboring StateReforms	0.34	1.68	0	46	116823

Table 2: Determinants of Land Invasions in Brazil, 1988-2008

Dependent Variable:	Invasion Count				Invasion Families
	Model 1	Model 2	Model 3	Model 4	Model 5
Percent Rural	-0.674*** (0.220)	-0.673*** (0.212)	-0.665*** (0.211)	0.028 (0.210)	-1.117*** (0.349)
log(Ag Production)	0.305*** (0.024)	0.230*** (0.022)	0.232*** (0.022)	0.058*** (0.021)	0.264*** (0.037)
log(Income per capita)	0.055 (0.169)	0.207 (0.158)	0.226 (0.157)	0.471*** (0.091)	0.169 (0.223)
Δ log(Income per capita)	-1.544* (0.805)	-0.839 (0.877)	-0.790 (0.872)	-2.520*** (0.471)	0.472 (1.297)
Land Inequality	5.699*** (0.390)	5.063*** (0.366)	5.809*** (0.399)	0.963*** (0.365)	8.103*** (0.714)
Cumulative Grants		0.211*** (0.015)	0.209*** (0.015)	-0.004 (0.005)	0.261*** (0.026)
Neighboring Reforms		0.047*** (0.004)	0.235*** (0.035)	0.054** (0.024)	0.415*** (0.069)
Land Gini*Neighboring Reforms			-0.239*** (0.044)	-0.039 (0.030)	-0.477*** (0.085)
Year Effects	YES	YES	YES	YES	YES
Municipal Fixed Effects	NO	NO	NO	YES	NO
Observations	97424	97424	97424	28435	97424

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$ (two-tailed)

Standard errors in parentheses (clustered by municipality in Models 1-3 and 5).

Constants estimated but not reported.

All independent variables are lagged by one period.

Table 3: Identifying spillover effects of land reforms on land invasions, 1988-2008
(Dependent Variable: Number of Land Invasions)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Percent Rural	-0.669*** (0.212)	-0.671*** (0.211)	-0.671*** (0.211)	-0.678*** (0.212)	-0.679*** (0.212)	-0.679*** (0.211)
log(Ag Production)	0.226*** (0.023)	0.226*** (0.023)	0.228*** (0.022)	0.226*** (0.023)	0.226*** (0.023)	0.229*** (0.022)
log(Income per capita)	0.209 (0.156)	0.209 (0.156)	0.216 (0.157)	0.200 (0.156)	0.201 (0.156)	0.206 (0.158)
Δ log(Income per capita)	-0.780 (0.879)	-0.782 (0.878)	-0.746 (0.882)	-0.928 (0.876)	-0.930 (0.876)	-0.898 (0.882)
Land Inequality	5.120*** (0.369)	5.118*** (0.368)	5.066*** (0.368)	5.121*** (0.369)	5.119*** (0.368)	5.063*** (0.368)
Cumulative Grants	0.215*** (0.015)	0.215*** (0.015)	0.212*** (0.015)	0.215*** (0.015)	0.215*** (0.015)	0.211*** (0.015)
Neighboring Expropriations	0.058*** (0.005)					
Neighboring Recognitions out of State	0.017 (0.017)	0.017 (0.017)	0.017 (0.017)			
Neighboring Expropriations in State		0.056*** (0.006)	0.055*** (0.006)			
Neighboring Expropriations out of State		0.064*** (0.014)	0.060*** (0.014)			
Neighboring Recognitions in State			0.037*** (0.012)			
Neighboring Federal Reforms				0.052*** (0.005)		
Neighboring State Reforms out of State				0.019 (0.017)	0.019 (0.017)	0.018 (0.017)
Neighboring Federal Reforms in State					0.051*** (0.006)	0.050*** (0.006)
Neighboring Federal Reforms out of State					0.056*** (0.013)	0.053*** (0.013)
Neighboring State Reforms in State						0.042*** (0.013)
Year Effects	YES	YES	YES	YES	YES	YES
Municipal Fixed Effects	NO	NO	NO	NO	NO	NO
Observations	97424	97424	97424	97424	97424	97424

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$ (two-tailed)

Standard errors in parentheses (clustered by municipality). Constants estimated but not reported.

All independent variables are lagged by one period.

Table 4: Determinants of PT support, 1988-2008
(Dependent Variable: Change in Vote Share of Worker's Party)

	Governor		President	
	Model 1	Model 2	Model 3	Model 4
Percent Rural	-0.003 (0.003)	-0.004 (0.003)	0.022*** (0.004)	0.022*** (0.004)
log(Ag Production)	-0.001*** (0.000)	-0.001** (0.000)	-0.003*** (0.001)	-0.003*** (0.001)
log(Income per capita)	-0.002 (0.002)	-0.002 (0.002)	-0.014*** (0.003)	-0.014*** (0.003)
Δ log(Income per capita)	0.041 (0.032)	0.005 (0.031)	-0.112*** (0.033)	-0.115*** (0.033)
Cumulative Grants	0.001** (0.000)	0.001** (0.000)	0.002*** (0.000)	0.002*** (0.000)
Land Invasions (3 yrs)	0.001* (0.001)	0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)
Land Inequality	0.003 (0.007)	-0.005 (0.007)	0.067*** (0.010)	0.064*** (0.010)
Land Gini*Neighboring Expropriations	-0.002*** (0.001)	-0.002*** (0.001)	-0.011*** (0.001)	-0.011*** (0.001)
Neighboring Expropriations	0.003*** (0.000)	0.003*** (0.000)	0.008*** (0.001)	0.008*** (0.001)
Land Gini*Neighboring Recognitions in State		0.006*** (0.001)		0.001** (0.001)
Neighboring Recognitions in State		-0.004*** (0.000)		0.000 (0.001)
Year Effects	YES	YES	YES	YES
Municipal Fixed Effects	NO	NO	NO	NO
Observations	15846	15846	15841	15841

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$ (two-tailed)
Standard errors in parentheses (clustered by municipality).
Constants estimated but not reported.
All independent variables are lagged by one period.

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