Decentralization of Land Governance and Elections in Burkina Faso

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Abstract

The decentralization of public services in developing countries should allow for efficiency gains and increased accountability to local citizens; however, more localized government could be more vulnerable to elite capture. In this paper, I examine how local political actors respond to the decentralization of land offices in Burkina Faso. I use the experimental pilot phase of this decentralization, along with 3 municipal elections, to causally estimate responses to the anticipation of treatment in addition to its implementation. I find that additional political parties contest elections in municipalities slated to receive pilot-phase local land offices, although voter turnout drops somewhat and elections do not become meaningfully more competitive. After implementation and documentation of land rights, both parties and voters behave similarly to their control municipality counterparts. I also explore the mechanisms driving these responses, and argue that the documentation of land rights itself is politically important, not only as a source of rents but also for political actors who consider constituent welfare. This goes beyond traditional concerns with embezzlement of government resources to suggest that the process of documenting land rights is itself politically valuable and subject to elite control.

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Introduction

Over the past three decades, developing countries have increasingly decentralized public services, moving government functions from capital cities and major urban centers to rural areas. Providing these services closer to the site of use should allow for efficiency gains in local public goods provision, increasing providers' information about user needs as well as decreasing users' transaction costs. Furthermore, local governments should be more accountable and responsive to citizen concerns. At the same time, however, there has been substantial concern and some evidence that politics at a local scale could be more vulnerable to elite capture (Bardhan and Mookherjee, 2000). Ultimately, these important trade-offs lead to empirical questions that speak to the appropriate level of government service provision. Therefore, I examine how local actors' political behavior changes in response to the experimental decentralization of land offices in Burkina Faso.

Local municipal councils were created in Burkina Faso in 2006 to provide services for local populations, although local decision-making was limited. Beginning in 2012, the legal framework governing land rights changed, and land administration, including the documentation and formalization of existing land rights, was moved to local governments. This decentralization made control of local governments more valuable: municipal council members could expect to exert some influence over the documentation process, and in particular, could help resolve conflicts stemming from overlapping rights and perhaps redistribute rights between claimants. This was particularly true in anticipation, as it was believed control would be very localized (in practice, there was substantial oversight during the pilot phase under study). Therefore, politically-engaged residents outside of the traditional political elite who heard about the creation of land offices in their municipality faced incentives to compete for local political office, even in historically uncompetitive elections. These incentives were stronger in areas where the formal documentation of land rights is more valuable, particularly near-urban rural areas where documentation would allow outsiders to fulfill latent demand for land.

In this paper, I answer two main economic questions. First, do local political actors respond to a national-level policy of the decentralization of land offices? To answer this question, I use the experimental pilot phase of the decentralization funded by the Millennium Challenge Corporation, along with municipal election outcomes. This allows me to measure the causal impact of decentralization on the behavior of political parties and voters. I find that additional political parties are more likely to field candidates for office in a given municipality in response to the announcement that their mu-

nicipality will receive a pilot-phase local land office. At the same time, voter turnout drops in these municipalities, an unexpected result for fully-informed voters facing a suddenly more-important local government choice. After implementation of local land offices, both political parties and voters again behave similarly to their counterparts in control municipalities, although voter perceptions of corruption at the local level have decreased. Secondly, what mechanisms explain these observed responses? I also use other data sources, including Afrobarometer survey data, in order to explore the mechanisms at work. These, combined with a theoretical model that predicts heterogeneity, suggest that politically-informed actors are not only responding to the potential for private rents. Instead, the process of documenting land rights is itself politically valuable for politicians who care about constituent welfare. In municipalities near urban centers, the potential for formal documents to shape *de facto* land rights and provide access to outsiders gives greater weight to the documentation process. This goes beyond traditional concerns with embezzlement of government resources, and implies that the political control of decentralization will not necessarily worsen welfare outcomes.

The timing of the experimental pilot phase of decentralization in Burkina Faso has advantageous features for understanding political responses. I combine this experiment with three local elections that occurred between 2006 and 2016. The first election I consider a baseline, the second took place after treatment status was announced but before implementation, and the third after land offices had been created and had begun documenting rights. I therefore can look at differences in the changes over time between treatment and control localities in order to identify the anticipation effects of the announcement and the impacts of the implementation on political behavior.

Literature Review

This paper speaks to several strands of literature on the political economy of developing countries, bringing together themes of decentralization and political behavior, governance, traditional institutions, and property rights.

Essentially, the creation of land offices at the municipal level can be understood as a decentralization of a fundamental function of the state, guaranteeing property rights. There has been substantial interest in the effects of decentralization: voters should have better information about local politicians, so may be better able to hold them to account (Casey, 2015), but more local governments may suffer from capacity constraints that lower the quality of public services provided

(Lago-Peñas et al., 2011; Ponce-Rodríguez et al., 2018). The impacts of these capacity constraints, in terms of bureaucratic experience, ability to tax, and bargaining power for resources from the central government, have been shown to be detrimental to nighttime light density in Burkina Faso (Billing, 2019).

Brollo et al. (2013) use data from Brazil to demonstrate another concern with governance in decentralized units: in a regression-discontinuity design, they show that larger transfers to local governments allow incumbents to be more corrupt without being punished, as imperfectly-informed voters still receive sufficient public goods. Furthermore, they show that lower-quality candidates run for office, which further reduces the costs of corruption for incumbents as the outside option for voters is less attractive. Their model distinguishes between expected and actual government transfers, though they are unable to separate these empirically as they only observe realized transfers; my unique setting does allow me to distinguish these two effects temporally. Furthermore, their work only considers politicians' private rents, while I find suggestive evidence that politicians are motivated by providing public goods for their constituents.

There has additionally been some attention in political science to the decentralized election, although much of it relies on cross-country regressions which are difficult to interpret, as subnational structures differ widely. Blais et al. (2011), for example, find no effect of decentralization on national turnout when looking across countries, although they do see some within-country evidence of increased turnout in subnational elections as their relative importance increases. Gélineau and Remmer (2005) show that voters have trouble with attribution at the subnational level, often rewarding or punishing candidates according to national administrative performance.

This paper also fits within a sprawling literature in political economics on incentives faced by politicians, and in particular, strands looking at elite capture. Elite capture of political institutions is widely recognized in Burkina Faso: "the brokerage implies that the leader will 'eat' part of the money ... although the 'eating' of money is not condemned unless the leader fails to nourish his clients" (Hagberg, 2004, p. 206). However, in the context of municipal elections in Burkina Faso, attribution to individual politicians is difficult given the institutional structure, so I use political parties as the unit of analysis. Casey et al. (2019) point out, though, that for individuals there can be returns to candidacy even for those who lose elections, "as candidacy opens up avenues to public sector employment." This paper's attention to disentangling these incentives adds a new dimension to this literature.

Within political science, party entry has also been the subject of theoretical and empirical attention. The basic theoretical framework used by Margit Tavits and others considers the expected benefits of entering political competition (probability of winning and benefits of office) against the costs of entry (Tavits, 2006). My model considers these parameters explicitly, but observed differences between treatment and control municipalities are likely to be driven primarily by the expected benefits of holding office changing in response to new issues (land offices) that emerge. Tavits points out that "we would expect that the *benefits of office become more significant in entry calculations if the probability of getting elected is small*" [italics in original] (Tavits, 2006). She further argues that new party entry is more important in emerging democracies such as Burkina Faso (Tavits, 2008). And importantly, "even if a new party poses no threat of replacing an established one, its presence will have an impact on electoral competition" (Tavits, 2006).

This paper also draws upon a well-established qualitative literature that is beginning to receive some acknowledgment among economists and policymakers, exploring the importance of customary institutions in democratic politics. Although traditional leaders are often considered as parallel to the state, drawing upon different sources of legitimacy, Adotey (2019) points out that in West Africa, they are often mutually dependent, and claims to both land and citizenship call on the same patterns of 'custom' and 'history', creating "intersecting tensions over eligibility for land access and political participation" (Berry, 2009). For example, in Burkina Faso, the "administration benefits from the informality of [pastoralists]. As long as they only have informal power, they need the support of the administration in order to be able to manage pastures effectively" (Benjaminsen and Ba, 2009). Although this is particularly true for pastoralists who have historically had less-formalized land rights, as managing herds requires flexible access to multiple locations throughout time rather than exclusive use rights, the relationship between traditional [agricultural] chieftancies and the state also rests on informality. On the other hand, clientelism operating through traditional institutions pervades the bureaucracy, where "any position in the public services is assessed first and foremost according to the access to privileges that it provides" (De Sardan, 2008). Customary land rights in particular are always being negotiated, with actors claiming "the same resources under different logics" (such as state-sponsored documentation and 'traditional' rights) (Pernes, 2012). As we think about political contestation of land offices, then, it may not be corruption in a strict sense but rather protecting potentially valid claims. Although I will devote some attention to this when considering mechanisms, in a reduced-form sense we would expect much the same effects from both drivers of

contestation.

Quantitatively, Eifert et al. (2013) find support for these mutually-constitutive formal and informal institutions: using Afrobarometer surveys from across the continent, they show that ethnicity is used as a way to mobilize people in (more competitive) election. They speculate that this could either be elites mobilizing ethnicity to win voters, or voters mobilizing their ethnic identities to claim patronage.

The current paper is in some ways very close to work by Lierl and Holmlund, who have a series of papers experimentally looking at different dimensions of municipality governance in Burkina Faso (Lierl and Holmlund, 2019; Lierl, 2015). In the first experiment, which occurred prior to the 2016 municipal elections, they used a lab-in-field setting to see if electing leaders could impact embezzlement, even absent incentives for reelection (Lierl and Holmlund, 2019; Lierl, 2015). They argue that this experiment shows that transparency of public funds is a necessary complement to elections for accountability. The second experiment took place in municipalities in which the national ruling party had been incumbent for almost 10 years (Lierl and Holmlund, 2019). Experimenters gave local citizens information on the incumbent's performance on service delivery targets in the treatment condition, as opposed to merely information on what the targets and indicators were. They find that the additional information had no significant effect on turnout nor the likelihood of voting for the incumbent (whether the information revealed was good or bad). Their results are consistent with ambiguity aversion, where voters prefer the candidates or parties they have the most information about, even if that information was bad. Another empirical paper with similar questions in the same setting is that by McMillan et al. (2011), who find that recent increases in rural population density in Burkina Faso (due to exogenous migration) improves local infrastructure, public services, and the regulation of land rights ("more reliance on the rule of law to adjudicate disputes").

Finally, this paper draws upon a rich literature on land rights, especially on customary tenure institutions in Sub-Saharan Africa. These institutions are embedded in the social relationships of a community. One particular way in which this social nature of customary tenure works is by having "overlapping rights over the same resources held by different users" (Cotula et al., 2007). Ensminger, an anthropologist, specifies that "A common characteristic in almost all African customary systems is for use rights to be assigned at the household level, whereas transfer rights are assigned at a higher level such as the lineage, clan, or chiefdom" (Ensminger, 1997). This means that although

individuals may be quite secure in their ability to use a particular plot of land in their lifetime, a reallocation within the community could occur to adapt to changing circumstances. Customary leaders also are able to allocate (often unused) land to migrants into an area, as well as adjudicate any conflicts that may occur between members of the community. Although the particular ways in which these rights are divided may vary considerably across the region, this 'disbundling' of property rights is common and adds a strategic dimension to any decisions about land. Much of this literature has focused on the investment incentives shaped by customary tenure. It has been argued that "sufficient investment incentives tend to be provided by basic rights of use that, under normal circumstances, are guaranteed to many villagers (including migrants) by the local informal order": that is, this dispersion of rights is not a cause of instability or underinvestment in itself (Brasselle et al., 2002).

Another common feature of customary systems is that elites, representing the family or lineage writ large, have served as trustees or administrators of land owned by the family group. Often, they hold transfer rights, in order to (re)allocate land within the community in response to shocks (such as inheritance), as well as prevent the alienation of a communal resource without the consent of the community. When viewed from a Western notion of ownership based on freehold tenure, however, this distribution of rights can be read as ambiguity about who the 'owners' of land are. This ambiguity has been at times exploited by local elites: "There is a fine line between chiefs as (often self-declared) owners of all land in customary laws, and chiefs as trustee administrators" (Alden Wily, 2011). This process is exacerbated by pressures on other features of the traditional social environment. "While customary authorities are still effective in regulating land access, the collegiate bodies that used to oversee their work are not; the result is a breakdown in accountability and a privatization of common lands" (Cotula et al., 2007). Elites are therefore able to respond as individuals rather than as guardians of the corporate group, and represent their rights as ownership to outsiders unfamiliar with the complexities of local tenure arrangements. Mattingly (2016) documents a similar process in China: when lineage elites join village political institutions, although public goods provision increases, so does the likelihood of land expropriation. He argues that "social institutions serve as channels of bottom-up informal accountability *and* top-down political control', depending on the incentive structure: public goods provision has features of a repeated low-stakes game (inducing cooperation between elites and their communities), but land development is more like a one-shot game with higher stakes. This has important parallels with elites in Sub-Saharan Africa, as we shall

see.

The qualitative literature on customary tenure has documented the tensions and conflicts that emerge as customary systems adapt to external pressures, such as rising land values. Most cases have considered land values to be rising due to *non-agricultural* uses, such as urban and peri-urban expansion, or the potential for natural resource extraction. Some large scale land acquisitions have been for agricultural purposes, although generally at such a scale or using technologies such that local smallholders are unable to participate. Therefore, this should be thought of as an increase in the marketable value of the land rather than its value to smallholder agriculture.

In a report by IIED and FAO, the stress this puts on customary systems is discussed repeatedly: "As land values rise, farmers may be forced or tempted to sell their land. Where land is still under customary chiefs, these may be tempted to sell off lands for housing and other developments, regardless of the views of those actually farming this land" (Cotula et al., 2004, cited in Cotula et al. (2007)). In Ghana, this is manifest in the same parcel of land being sold multiple times by and to different people; "many of these multiple sales are by different people in a family lineage, each contending that they have the status to sell under the customary system" (Barry and Danso, 2014). More often, however, "land scarcity may lead to a redefinition of the land claims of different groups within the extended family... with weaker groups becoming more vulnerable to losing their land access" (Cotula et al., 2007). Despite abundant stories of how "local elites have been able to use their position and the ambiguities of customary law to appropriate land to further their own economic and political interests" (Ubink, 2008), especially in peri-urban areas but also in many rural ones (Ubink and Quan, 2008), this particular facet of how customary tenure adapts to external pressures has been little studied by economists.

Despite the substantial and active literature across several disciplines that this paper draws upon, it makes several additional contributions. I am able to exploit an experimental context to provide causal evidence on political behavior; in particular, behavioral changes incentivized by decentralization. Furthermore, I am able to explore several mechanisms for the observed behavior, which shed light on how these incentives function in political calculations.

Context

Land Rights in Burkina Faso

Although these reforms can be understood as any other decentralization of public services, they are also a land reform, documenting and formalizing customary land rights. Understanding what customary land rights look like in Burkina Faso, then, can help us contextualize and understand the value of land offices. Qualitative scholars have pointed to the importance of host/stranger relationships in negotiating land rights in much of West Africa: first settlers in a region will have strong rights to use the land, but they are also responsible for allocating it to later migrants whom they 'host' in the region. The rights held by both hosts and long-settled migrants are often framed as ownership, and the extent of these rights is being continually negotiated. Claims to land are often based on continuity of cultivation, with fallow periods (a key investment in soil fertility) opening up competition for that land, particularly with increasing population pressure on the land (Kevane and Gray, 2001; Goldstein and Udry, 2008). Customary authorities are deeply involved in mediating these negotiations, and this role is recognized by the Burkinabe constitution. In recent years, these processes have at times spilled into open conflict, particularly in areas where pastoralists have negotiated access rights to water points or dry season forage near farms. Over time, there has also been a "tendency towards management of land rights by increasingly smaller units, such as households and individuals as opposed to extended families and lineages" (USAID, 2013).

Despite long-standing and locally-recognized customary rights to land, under Thomas Sankara's regime in 1984, an agrarian and land tenure reorganization law denied formal recognition of customary rights, instead vesting all land in the state. This means that landholders did not have any formal legal documentation of their claims, as a rule. This contributed to the finding by Prindex (2019) that Burkina Faso was the most tenure-insecure country of 33 studied with 60% of tenure-insecure respondents citing government seizures as the source of their insecurity. In conjunction with MCC's Rural Land Governance project, however, the regime of Blaise Compaoré passed two laws pertaining to rural land rights. The first of these, Law 34/2009 "On Rural Land Tenure," was passed in 2009 and recognized customary rights as legitimate, created legal mechanisms for the formalization of these rights, and laid out plans for municipality-level *Services Fonciers Ruraux* (SFRs), which would be supported by MCC in the pilot phase. Then in 2012, Law 34/2012 "On Agrarian and Land Reform in Burkina Faso" described rural land certificates: these *Attestation de Possession Foncière Rurales*

(APFRs) would fall between full titles and defined use rights, presenting the opportunity for further formalization into private land rights in the future. Although these documents provide important flexibility in a customary context, there was some ambiguity about how they should treat collective, lineage, customary, or pastoral lands, leading to substantial local variability. Both of these laws have been held up by some as examples for recognizing customary land rights while still allowing for their evolution and change. These reforms also set up Village Land Commissions (CVF) along with Village Development Councils (CVD) and Village Conflict Conciliation Commissions (CCFV), which would be involved in the most local levels of formalizing rights and mediating conflicts, in addition to the municipality-level Rural Land Tenure Services (SFRs) which would hold primary responsibility for documenting rights and would have a permanent staff. There were some difficulties at the start: "The National Municipal Association of Burkina Faso (AMBF) blames the slow implementation of new, decentralized land services on the lack of autonomy allowed to local governments to use funds transferred from the central government as they see fit, and on the reluctance of deconcentrated technical services to support local empowerment (Kaboré et al 2014)" (USAID, 2013). In particular, the final approval of APFRs initially required action by the central ministry responsible for lands, which delayed delivery of documents. Overall, however, the Burkinabe experience has been held up as an example for the continent in documenting customary land rights. MCC is conducting an impact evaluation which looks at the impacts of SFR offices and the documentation of land rights on tenure security and investment in land; I use their randomization of treatment locations but do not have the data to look at these (important, but distinct) outcomes and instead focus on the political incentives created.

Politics in Burkina Faso

The political context in which these reforms took place is important to understand, both to fully comprehend what specifically we are able to observe in the data as well as to reconcile some surprising findings that emerge from the particularities of the context. Burkina Faso was dominated by a single party, and a single president, for decades. Blaise Compaoré and the CDP took power in 1992 in a coup against the previous long-serving president, Thomas Sankara, and proceeded to overturn many of Sankara's leftist and third worldist policies. In 1993, the government passed the first decentralization laws, but it was not until 2004 that authority and finances were transferred to local governments, and many rural 'communes' (municipalities) were created to fill these governance roles.

Each municipality would be governed by a council made up of two elected representatives from each village in the municipality, along with a mayor elected by the council. The first municipal elections were held in 2006, in which the CDP won 72% of council seats; allied political parties came in second while the opposition only won a few seats. Participation nationally was around 49%.

In November 2010, Compaoré was easily elected for another term as president. However, by the 2012 joint legislative and municipal elections, what was seen as a viable opposition party (the UPC) had emerged, which was mobilized by concerns that the CDP would amend the constitution to allow Compaoré to be reelected. Turnout was 76% nationally, "attributable to the perception that the newly established UPC would present a credible challenge to the CDP and the ADF-RDA at the polls, whereas a CDP victory was viewed as a certainty in the 2007 pre-election period" (Pryce and Nascimento, 2014). Nevertheless, the CDP won 70 of 127 legislative seats. The opposition's worries turned out to be well-founded, as in October 2014, Compaoré did try to amend the constitution to extend his rule, which prompted a popular uprising. The political upheaval lasted for 18 months, although in November 2014 a transitional government (backed by the military) was installed until elections could be held. The transitional government suspended municipal councils and sent 'special delegations' to fill administrative roles until new elections could be held (Lierl, 2015), although local bureaucracies, including SFRs, remained in place. November 2015 saw presidential and legislative elections, which barred allies of Compaoré from running; turnout was around 60% nationally and former Prime Minister Roch Marc Christian Kaboré was elected president. The transitional period was finally brought to a close with municipal elections in May 2016.

There are a few features of the broader political environment which are also worth noting. First, in order to contest elections at a municipal level, candidates must belong to a political party, and ballots list parties rather than individual politicians. However, these party affiliations are unstable: a "leader builds up power and popularity through a network of alliances and relationships rather than through a program or an ideology; this is why party affiliation can change overnight" (Hagberg et al., 2018), and party alliances are determined in each locality and may not reflect national alliances between parties. There is a constitutional ban on ethnic affiliations for political parties, although some have noted that at a local level, ethnic divisions or tensions often play a role in understandings of parties.

The municipal councils which are the focus of this analysis are also worth highlighting briefly. Decentralization efforts were ongoing nationally, giving municipal governments at least partial re-

sponsibility for primary schools, health centers, water point maintenance, and administrative services such as civil registries (Lierl and Holmlund, 2019). However, this was primarily a deconcentration of functionality, rather than a delegation of decision-making power to local levels; staff and decisions were sent from the central level to merely implement locally. Additionally, the experimental setup of the RLG pilot phase should guarantee that the transfer of these other responsibilities was happening orthogonal to treatment status, and thus not drive the observed results. Ideally, I will be able to control for other kinds of transfers from the central government using budget or other administrative data.

MCC Rural Land Governance Project & Impact Evaluation

Finally, it is important to have a clear sense of the 'treatment' under consideration. The Millennium Challenge Corporation (MCC) signed a 5-year, $480.9 million, compact with the government of Burkina Faso in 2009. One component of this compact was a Rural Land Governance Project, which would proceed in 2 phases and represented a $58 million investment. By improving land tenure security and land management, the project aimed to increase investment in land and rural productivity.

During the first phase of the project (2009-2012), MCC supported the government in drafting two land laws, described above, as well as piloted land offices in 17 municipalities. These 17 locations were chosen as priorities (although the exact criteria are unclear), and are not balanced at baseline when compared with their phase I comparison municipalities nor with the rest of the country. This period also saw national-level legal changes, so the first phase is less useful in causal identification of impacts.

In mid-2012, however, plans were made for the second pilot phase of the project, when an additional 30 municipalities would be brought in. These locations were chosen in matched pairs, and then one would receive the land office (SFR) during the pilot phase, in order to conduct a rigorous impact evaluation (ongoing, focusing on impacts on tenure security and investment at a micro-level). All documentation I can find implies that the selection of which municipality in a pair was chosen was either random or as good as random, as both were selected using the same criteria including land conflicts or uncertainty. Nevertheless, I cannot entirely rule out that there was some selection of treatment areas to politically benefit the incumbent party, as studied in Ghana by Briggs (2012). However, unlike in his study, I find no strong baseline differences between treatment and

control areas (nor between study areas and those outside the study, for that matter) on political outcomes, which he does. The timing of the announcement of treatment locations, however, almost certainly was politically expedient: prior to 2012's municipal elections. It is difficult to pinpoint the precise public announcement of Phase II treatment locations, but the baseline evaluation report submitted in August 2012 lists them, and they are highlighted on a public map dated November 2012 (figure 2). Therefore, we can consider that in the 2012 elections, local elites in treatment municipalities at least had been made aware that they would in the future receive local land offices, and any responses are due to the anticipation effects of this announcement. I have been unable to locate local news announcements of these coming land offices prior to the 2012 election, however, so it seems unlikely that a majority of voters was fully aware. Therefore, I would interpret responses by political elites (including parties) as stemming from the announcement, but responses by voters (including turnout and vote choices) as being proximally caused by the behavior of political elites.

After the 2012 municipal elections, the second implementation phase of treatment began. In 2013, trainings were held in treatment municipalities, rural land offices (SFRs) were created, and two agents were hired to staff them: a mapmaker (skilled, often recruited from the city) and a communication agent (recruited locally, and generally suggested by the mayor or council members in practice). Several people involved in the process noted that the mapmakers often abandoned what was seen as boring, low-paid work in rural areas, so communication agents were trained to take over mapmaking responsibilities; additionally, although all positions should have been filled competitively, local politicians had significant influence in their selection. Despite plans for SFRs to function as part of the municipality administration, several experts expressed concern in interviews that the external funding of the pilot phase created a distinction between SFRs and other municipality functionaries, as well as that the ability for SFR offices to collect fees to support themselves (with the potential to keep 'extra' revenue) undermined "the logic of public administration" (personal interviews).

In addition to municipal-level administration, village-level land institutions were recruited in treatment areas during the pilot phase. These village-level institutions began by creating participatory land use maps, which brought the community together to demarcate overlapping rights and claims to land. Then, land rightsholders were able to request documentation of their rights, which would be reviewed by the SFRs before documents were prepared from 2013-2014. During this period, over 60,000 stakeholders were trained on conflict resolution and land management. In MCC's report as they closed out the compact in July 2014, they noted that 47 communal land use maps had

been created (in 17 phase I and 30 phase II municipalities), 78 land administration offices had been established or upgraded, and 47 municipal buildings (holding SFRs) had been created (Millenium Challenge Corporation, 2014). These buildings were purposely located near other administrative offices, to facilitate a 'one-stop shop' for all necessary documentation. Although 13,447 applications for APFRs had been received by mid-2014, only 2,167 had been approved by local governments and only 403 documents had actually been distributed. MCC's own impact evaluation focuses on perceptions of tenure security, the frequency and types of land conflict, and investment decisions. A midline review that focused on Phase I municipalities found a decrease in some perceptions of tenure insecurity (such as concerns over the arrival of newcomers or return of previous villagers, although not on concerns about inheritance disputes or issues between pastoralists and farmers), but no statistically significant change in conflicts or agricultural productivity; this is expected from shorter-term data only a few years after the intervention, as these variables take longer to change (Millenium Challenge Corporation, 2014). MCC was very involved with the process throughout the pilot phase, and have emphasized their safeguards against corruption and elite capture in discussions of the project. Further implementation, particularly the rollout to additional municipalities, was largely put on hold during the political unrest from 2015-2016. Fortuitously for this research, that means that control municipalities had not yet received any treatment by the 2016 municipal elections. A full timeline of MCC's project, as well as major political events, can be seen in figure 1.

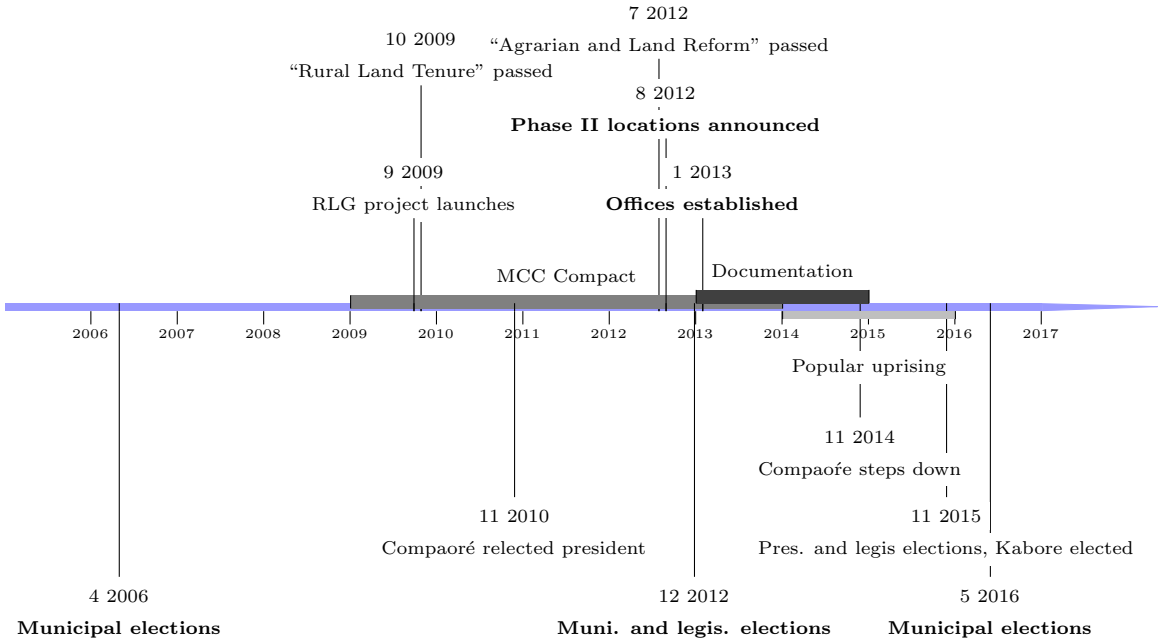

Figure 1: Politics, Land Rights, and Impact Evaluation Timeline in Burkina Faso. Observed data and treatments in bold.

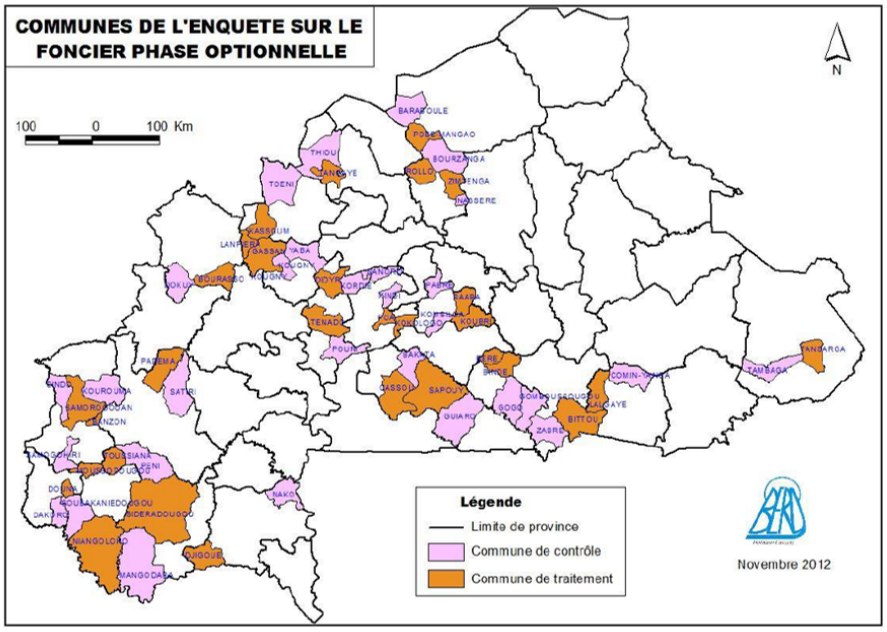

Figure 2: Map of Rural Land Governance Project Impact Evaluation Municipalities

Model

In this model, we start from a traditional model of party competition (I draw from Bardhan and Mookherjee (2010) and Bardhan and Mookherjee (2000), who draw from a Grossman and Helpman (1996)-style model which is relatively common). However, I add two features to this style of model: first, I allow for party entry rather than assuming 2 parties (modeling party entry with a standard model as in work by Tavits (2006), and secondly, allowing for more than 2 potential parties. There are other minor modifications which I will discuss as they emerge. More details and a formal solution can be found in the appendix.

To illustrate the intuition, however, I consider the entry decision of a second political party in a context where one party has historically dominated (and always contests the election). The model can easily be extended to allow for multiple challengers to this incumbent.

Consider a stylized village which has several potential groups of people, with groups denoted by g. There is an incumbent political party which has historically dominated local politics and therefore faces extremely low costs of contesting elections. These costs are low enough that for any non-zero probability of winning the election, this party (denoted d) always contests the election. A potential challenger can choose to create a political party c and contest local elections, although this is costly

(with party-specific costs of running for office C_p).

The benefits of holding elected office are twofold: first, there are private rents that accrue to the officeholder, E_p (which could be nonmonetary, such as prestige, but are increasing in the resources controlled by the local government).

Secondly, parties have intrinsic preferences over the interests of the classes they represent, represented by welfare weights w_g^p on the utility $U(\pi)$ of each group g. These enter into the politician's payoff as $\sum_g \alpha_g w_g^p U_g(\theta\pi)$. That is, constituent welfare is important to political entrepreneurs, independent of their private rents from holding office. The parameter θ represents the correlation between *de jure* and *de facto* rights: that is, to turn the policy position π_p of a candidate for office into reality (and this reality is what matters for constituent welfare).

Therefore, if a party p wins office, their benefits of holding office are given by $E_p + \sum_g \alpha_g w_g^p U_g(\theta\pi_p)$ and if they lose office to party q, their payoff is $\sum_g \alpha_g w_g^p U_g(\theta\pi_q)$.

Politically-informed voters choose who to vote for based on their expected utilities if governed by each party and their (randomly distributed) loyalty towards the incumbent party, v_g. This loyalty has a group-specific distribution. Therefore, voters of group g vote for party c over the incumbent d if $U_g(\theta\pi_c) \geq U_g(\theta\pi_d) + v_g$, where π_p is the policy choice of party p.

I solve for party entry and policy choice using backwards induction: parties consider how their entry and policies will affect voter choice, and maximize their own payoffs with this in mind. Therefore, I begin with voter choices before modeling the party decisions. The order of party decisions is as follows: first, the challenger decides both whether or not to contest the election and what their policy, π_c, will be. Then, the incumbent party (which always contests) announces their own policy, π_d.

Pre-Reform Solutions

Before the announcement of the land administration decentralization, assume that local governments are constrained to follow central government policy directives. Therefore, π_p is the same regardless of the election result.

Informed voters of group g, then, vote for the challenger over the incumbent if $0 \geq v_g$.

Noting once again that policy choices are irrelevant, the challenger will choose to contest the election if:

$$\psi_c \left(\sum_g \alpha_g \int_{-\infty}^{0} v_g dv_g \right) [E_c] - C_c \geq 0$$

An intuitive result: they will only contest the election if the expected benefits of winning are greater than the costs of contesting. Note that if the average loyalty to the incumbent is positive ($\overline{v_g} \geq 0$), the probability of winning office is relatively low. Therefore in many cases, the challenger will not contest the election, resulting in the uncompetitive electoral environment we observe before the introduction of the land reform.

Reform Announcement Solutions

When a municipality learns that it will receive a land office in the next electoral term, however, the policies implemented by the next election's winner become meaningful to both voters and politicians. Land offices in Burkina Faso were designed to be locally controlled, unlike the deconcentrated municipal services which operated under direction from the central government. The decisions made during the land documentation process could matter substantially to constituent well-being: fair documentation of rights should improve tenure security (with well-explored theoretical and empirical implications for agricultural investment as well as improved access to rental and credit markets), but an unscrupulous actor could take the opportunity to claim documents for land they do not have (primary) rights to. This means that party c can attract more voters of group g by campaigning on a platform that favors them in the land reform; if this platform is redistributional and makes voters of group h worse off, then they will lose voters of group h.

This model demonstrates that by announcing policies that favor one group in the population, challenger parties can induce the incumbent to shift their own policies from what they would have proposed in the absence of competition. Essentially, in order to win votes from multiple groups, the incumbent will respond to the policy proposal of the challenger by moderating their own policy stance.

Heterogeneity: Municipalities Near Cities

There are tensions inherent in the land documentation process which become increasingly important in municipalities close to cities.

I will refer to these rural areas that are reasonably close to (rapidly growing) cities as 'near-

urban' for concision, but it is important to note that they are predominantly rural in themselves. That is, local constituents are engaged in a primarily rural way of life. However, urban residents are increasingly seeking to purchase rural land near their city homes, as a source of insurance, connection to the countryside, or vacation home. These urban residents may have extended family in other regions of the country, but seek a closer rural retreat. This also implies that they likely have little or no connection with the inhabitants of the nearby rural municipalities they seek to buy land in. Two important implications stem from this fact: first, we can ignore them as constituents in either voting behavior or politicians' preferences, and second, they have a relatively higher demand for clearly-documented land.

This latter point is crucial. Rural residents are embedded in the same social environment as their customary land rights: the individual who holds secondary (access, transfer, etc) rights to your farm plot is your neighbor, uncle, or friend. As documented in a substantial body of qualitative evidence, this also means that bundles of rights being distributed across multiple individuals does not in itself make those rights less secure. However, an outsider to this social system will struggle to parse its property rights. Therefore, the value of clearly documented rights, backed by the legal framework of the state (as opposed to the social environment), is higher for outsiders to the community, particularly those seeking land for part-time use who may never become part of the community.

Urbanites seeking land in nearby rural areas have a higher relative demand for documentation, then. They are willing to pay higher fees to cover the cost of documents. The decentralized SFR offices, then, can set higher fees for APFR documents if they are near urban areas, to tap this higher willingness to pay. These fees become part of the municipal budget, which local elected officials can take advantage of. In the context of the model, this can be represented as a larger increase in E_p in near-urban areas when the land offices are introduced.

The model therefore predicts more party entry in response to the announcement of treatment in near-urban municipalities. This is a relatively straightforward story of political rents: the rents of holding office increase more in near-urban areas due to higher willingness to pay for documentation by outsiders (and by existing residents), and so we see a political response.

This model also demonstrates another mechanism by which the introduction of land offices in near-urban areas leads to a greater response by political parties choosing to contest the election. Parties also care about the welfare of their constituents, as captured by the payoff term $\sum_g \alpha_g w_g^p U_g(\theta\pi)$

(and not only their own private rents, E_p). If rights on the group respond more to policy in near-urban areas, then the value of contesting the election is higher in near-urban areas set to receive a land office.

To understand why constituents may care more about land documentation policy in near-urban areas, consider the role of policy in a general sense. Under a customary system, there often is a primary rightsholder - generally the user of the land - as well as secondary rightsholder(s) who may have some say over alienation of the land (selling it), and/or access or other rights. In an isolated rural environment, if the documents created by SFRs exclude secondary rightsholders, or are granted to an individual without primary use rights, there are relatively few consequences. Without a strong permeation of the state's legal system and enforcement (that is, a low θ, so *de jure* rights do not get translated into *de facto* reality), the individual who holds socially-sanctioned customary rights will continue to exercise them, regardless of what documents say. However, in near-urban municipalities, the risks of the documentation process become larger. Imagine that documents are granted to a secondary rightsholder who is not the primary user of the land. They then sell this land to an urbanite, who accepts the document at face value as indicating they are the appropriate person to sell the land. The urbanite is able to enforce their legal rights, through better access to the formal (state) justice system. This dynamic is captured in the model as an increase in θ, the efficacy of the policy: the land documentation process has larger effects in near-urban areas than in more remote ones where a policy may be blunted. Returning to the two-group simplified case detailed above, we can also see that elites would have more incentive to control the documentation process and have land documented in their name, as they can sell it on to outsiders.

Formally, an increase in θ will also cause relatively more political entrants to contest elections in municipalities near urban areas in response to the reform. This is not only due to the higher weight on the constituent-welfare component of the politicians' payoffs: the strategic interactions of policy choices explored above also become more important.

I have shown two mechanisms by which potential candidates in municipalities close to urban areas will respond more strongly to the creation of land offices than their counterparts further away. Both of these mechanisms stem from urban outsiders' demand for land and their inability to navigate the nuanced social complexities of customary tenure. Despite having the same net effect, the two mechanisms are theoretically distinct: the latter goes beyond private rents to account for politicians valuing their constituent welfare. In a later section, I explore ways to empirically distinguish between

these mechanisms. Understanding the relative importance of each mechanism may have policy relevance: if political actors are driven primarily by their private rents, then observing more political control at local levels is worrying. If, however, political actors are responding to their constituents' welfare, then political control may not in itself be a problem.

Post-Reform Solutions

We also observe elections that occur after the creation of land offices, so it is instructive to see what the model predicts. After SFRs were created, they engaged in a participatory land-use mapping exercise in each village in the municipality, which documented existing rights, with an attention to secondary rights. This process was overseen by MCC, which may have limited the ability for elected officials to implement their preferred (redistributive) policy (dampening θ in practice). However, the process of finalizing APFR documents was still ongoing at the time of the 2016 municipal elections, so political actors could expect future fees to contribute to municipal accounts.

Therefore, we can (at the extreme) consider a post-reform case where there is no meaningful scope for land policy to be set by municipal governments, but the rents E_p created by the land offices persist. In near-urban municipalities, then, E_p should remain at an elevated level. The second mechanism, of constituent welfare responding more to land office policy in near-urban areas, however, is shut down. We can use this feature of the model, then, to empirically disentangle the extent of each mechanism in the observed responses: party entry in 2016 in municipalities which have received land offices will be driven primarily by private rents, as opposed to constituent welfare.

Data

In this paper, I use several data sources, matching them at the municipality-level with MCC's pilot-phase treatment status.

CENI Electoral Returns

There have been three municipal elections since decentralization reforms created municipalities as an administrative unit with a democratically-elected council. These occured in 2006, 2012, & 2016. The Commission Electorale Nationale Indépendante (CENI; Independent National Electoral Commission) publicly reports certified results of all elections, including these municipal elections. These

electoral returns specify, at the municipality-level, the number of registered voters, the number of votes cast, as well as the performance of each party contesting the election (number of votes and seats won). They do not include the party affiliation of the mayor indirectly elected by the council, nor any information on candidates or winners from party lists.

CENI currently reports online the electoral results from the 2015 presidential election, 2015 legislative elections (reports at the province level), and 2016 municipal elections (reports at the municipality and village levels) (Commission Electorale Nationale Independente du Burkina Faso, 2016). However, the Internet Archive contains municipality-level results for both the 2006 and 2012 municipal elections, which I use along with the 2016 municipal elections for consistency between observations (Commission Electorale Nationale Independente du Burkina Faso, 2006).[1]

Afrobarometer Surveys

In order to examine the attitudes and perceptions of voters which may be driving my results, I also use data from the subnationally geocoded Afrobarometer survey data (Benyishay et al., 2017). The Afrobarometer surveys use nationally representative samples of 1,200 citizens, geocoded to the municipality of residence. There have been three rounds of this survey in Burkina Faso to date, in 2008, 2012, and 2015, which neatly parallels the timing of municipal elections and the MCC intervention. Each wave of this repeated cross-section asks many of the same questions on political attitudes, including beliefs about and preferences for democratic functioning, perceptions of corruption, political identity, and voting intentions.

Despite being representative of the country as a whole, they do not survey citizens in every municipality. This restricts the sample in pilot-phase municipalities considerably, particularly as pilot municipalities were specifically chosen as priority areas in land conflicts (and are thus not necessarily representative of the country as a whole). The distribution of respondents in pilot-phase municipalities in each wave is given in Table 1.

Although survey respondents are reasonably well-distributed between treatment and control municipalities in each round, they are not as well-balanced within experimental pairs. Therefore, in working with this data, although we want to control for unobserved factors that link respondents who live in a region together, if we include experimental-pair fixed effects, we would be identifying

[1] I actually accessed 2012 results directly from the CENI website, but these results have since been removed (Commission Electorale Nationale Independente du Burkina Faso, 2012)

Year	Treatment	Control
2008	5 Municipalities	2 Municipalities
	80 Respondents	40 respondents
2012	11 Municipalities	10 Municipalities
	88 Respondents	80 Respondents
2015	7 Municipalities	4 Municipalities
	96 Respondents	64 Respondents

Table 1: Distribution of Afrobarometer survey respondents in pilot-phase municipalities

effects off of only three pairs which have both treatment and control municipalities within a pair in the same year (and that only in 2012). Therefore, we need to include a higher level of fixed effect, to ensure we are not only capturing noise. My preferred specification uses regional fixed effects (and clusters errors at the region level), which has much better balance across treatment and control municipalities in each round.

Other data

Finally, I use several other datasources to explore mechanisms and rule out alternative explanations. These include geo-referenced data from the William and Mary AidData database, such as mean travel time to urban centers for each municipality, population estimates, conflict events, and land use (Goodman et al., 2019).

I also am in the process of collecting local government budgets, which will allow me to estimate political responses to potential political rents, and thereby disentangle private rent-based incentives to contest elections from constituent welfare-focused policy-oriented ones. I will also use PRINDEX data on the perceptions of tenure insecurity to understand these welfare implications. I also am hoping to use local government performance scorecard data, collected as part of the Suivi de la Performance Muncipale (SUPERMUN), which tracks public service delivery and institutional capacity in municipalities nationwide.

Balance at Baseline

Although the experimental setup of the pilot phase should guarantee (in expectation) balance between treatment and control municipalities, it is important to examine outcomes of interest at baseline. We can additionally compare pilot-phase municipalities to the country as a whole, to get a sense of how generalizable the findings may be. We can see from table 2 that on most measures,

treatment and control municipalities look statistically similar, as well as similar to areas not in the study. We can see that there are some differences in perceptions of corruption in the 2008 Afrobarometer survey between study areas and other muncipalities, but although this may affect the external validity of our conclusions, there is little room for concern with the experimental, internal validity.

Empirical Strategy

Due to the timing of municipal elections in Burkina Faso, in conjunction with the pilot phase of the Rural Land Governance Compact, I can use an empirical strategy that stems from the intuition of a difference in differences. That is, by comparing changes in treatment municipalities to changes in control municipalities over the same period of time, any differences can be attributed to the randomly-assigned treatment. Any time-invariant municipality-specific differences will be differenced out over the time dimension, and any common shocks to all municipalities will be controlled for.

This empirical method relies on the assumption of parallel trends: in the absence of treatment, treated units would follow the same trend in outcomes as untreated units. Although we cannot directly test this assumption, it seems plausible in a randomized context (where in expectation treatment and control groups are identical). As additional support, we can check whether variables that we would expect not to be influenced by the creation of land offices have parallel trends over the period in question. For example, we can check if the number of council seats available for election, determined by a formula (2 seats per village in the municipality, supplemented proportionally by village population if there are fewer than 10 villages), seems to follow a common trend, as it appears to in figure 3. A variety of other placebo measures are discussed in the appendix, and do not give cause for concern about differential trends in the municipalities under consideration.

Although I observe municipalities voting in 3 elections, all treated units receive 'treatment' at the same time: first, the announcement that land offices will be created in these municipalities, immediately before the 2012 election, and then, the actual creation of land offices and associated activities from 2012-2014, prior to the 2016 elections. The main coefficients of interest in regression tables will be on the interaction of a municipality's treatment status with 2012 and/or 2016 year dummies. It is important to note that observations from 2016 keep the 2012 dummy 'turned on', so coefficients should be interpreted additively. This intuitively matches the treatment: the effects

Variable	(1) Phase 2 treat Mean/SE	(2) Phase 2 control Mean/SE	(3) Not in study Mean/SE	T-test Difference (1)-(2)	(1)-(3)	(2)-(3)
A: Municipality-Level Variables						
Seats Available	44.633	48.103	49.410	-3.470	-4.776	-1.306
	(4.008)	(5.194)	(1.992)			
Registered Voters	8658.100	8225.655	10950.218	432.445	-2292.118	-2724.563
	(750.101)	(706.072)	(863.770)			
Voter turnout rate	0.496	0.482	0.503	0.014	-0.007	-0.021
	(0.019)	(0.018)	(0.006)			
Parties Contesting	4.200	3.586	4.857	0.614	-0.657	-1.271
	(0.357)	(0.279)	(0.318)			
Effective # Parties (votes)	2.163	2.158	2.407	0.004	-0.244	-0.248
	(0.108)	(0.102)	(0.087)			
Near-Urban	0.100	0.034	0.094	0.066	0.006	-0.060
	(0.056)	(0.034)	(0.018)			
N	30	29	266			
B: Afrobarometer Survey	Mean/CI	Mean/CI	Mean/CI			
All/most corrupt: president	0.17	0.33	0.21	-0.15**	-0.03	0.06**
	(0.01 - 0.32)	(-0.47 - 0.93)	(0.11 - 0.31)			
All/most corrupt: local gov	0.11	0.30	0.24	-0.19*	-0.13**	0.03
	(-0.00 - 0.24)	(-1.17 - 0.83)	(0.16 - 0.32)			
All/most corrupt: gov officials	0.14	0.40	0.24	-0.26*	-0.11	0.08
	(-0.01 - 0.37)	(-1.72 - -1.36)	(0.17 - 0.32)			
Trust somewhat/a lot: local gov	0.63	0.68	0.63	-0.05	0.000	0.03
	(0.44 - 0.87)	(0.18 - 2.36)	(0.50 - 0.76)			
Leaders should not favor own group	0.40	0.25	0.35	0.15	0.05	-0.05
	(0.14 - 0.52)	(-0.38 - 0.70)	(0.29 - 0.41)			
Trust CDP	0.57	0.53	0.51	0.05	0.06	0.01
	(0.43 - 0.75)	(-0.55 - -0.41)	(0.39 - 0.62)			
N	80	40	944			
Clusters	5	3	12			

Notes: The value displayed for t-tests are the differences in the means across the groups. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level. For CENI Data, standard errors are clustered at the experimental-pair level, with all non-experimental municipalities in one cluster. Afrobarometer data includes regional fixed effects and wild cluster bootstrapped confidence intervals clustered at the regional level.

Table 2: Balance at Baseline

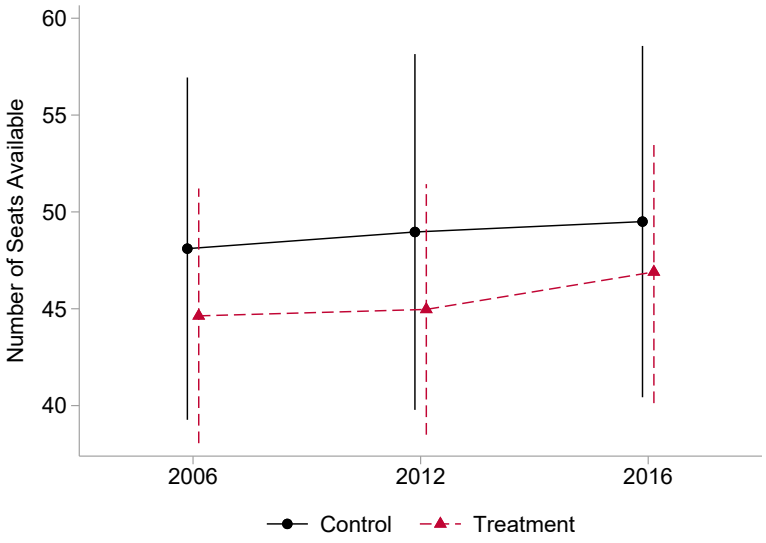

Figure 3: Parallel trends between treatment and control in seats available

seen in 2016 are of the marginal effect of implementation, above and beyond the announcement and anticipation of treatment.

For most outcomes, I report two main specifications. Both restrict the sample to Phase II municipalities (30 treatment + 29 control), clustering standard errors at the municipality-pair level. This level of clustering is shown by de Chaisemartin and Ramirez-Cuellar (2019) to be the appropriate one in matched-pair experimental settings such as this one. In the second specification, I also include pair fixed effects, which control for regional heterogeneity or other pair-specific factors.

For outcomes from the Afrobarometer survey data, I also use an empirical strategy that accounts for the spatially-clustered and unevenly distributed observations between treatment and control municipalities and across survey rounds. My preferred specification includes region (rather than experimental pair) fixed effects, which is the minimal geographic unit that consistently includes both treatment and control municipalities in a given survey round. I also use the Wild Cluster Bootstrap to estimate p-values (clustering at the region level), following Cameron and Miller (2015) in cases with few clusters, particularly with limited variation in treatment.[2] I separately bootstrapped each

[2]As Cameron and Miller (2015) suggest, the preferred specification reported uses the Webb 6-point distribution rather than the default Rademacher 2-point distribution, as it performs better with 12 or fewer clusters. However, the results are robust to the choice of distribution, as well as to omitting fixed effects, clustering at municipality or province levels (which are less conservative). I also consider survey weighting using Afrobarometer's computed weights; however, these are calculated to achieve national representativeness rather than representativeness of pilot municipalities.

coefficient of interest, so the interpretation of results post-treatment is as above: the additional impacts of implementation over and above those of the announcement, rather than their joint significance. Although most outcomes I consider from the Afrobarometer data are binary, I use a linear fixed effects model rather than a binary outcomes model such as a logit, as the logit cannot be Wild Cluster Bootstrapped.[3]

Responses by Political Parties

Turning to the results of my analysis, I first consider responses by politically sophisticated actors who have the potential to control local governments. Although we cannot directly measure the returns of holding office and thereby controlling local land offices, we can make inferences based on their choices that they anticipate these returns will be substantial.

Number of Parties Contesting

The primary observable way that political actors respond to changes in the political environment is deciding to contest the election. Therefore, if we use the number of parties contesting a given municipality's election in the CENI electoral data as the outcome in our difference-in-difference framework, we find the results presented in figure 4 and table 3. Both specifications in the table use only municipalities involved in the second pilot phase of the RLG project, clustering standard errors at the experimental pair level. Column (2) also includes experimental pair fixed effects, to control for unobserved heterogeneity between different regions of the country.

We can see that there was a substantial (and statistically significant in the non-FE specification) increase in the number of parties contesting in 2012 (increase of .66 parties on a base of 3.6), which was a historically competitive election across the country. Nevertheless, there is an even larger, statistically significant, increase in treatment municipalities (an additional .77 parties, p-value 0.096). This result is consistent with political actors observing the announcement of land office locations, which they anticipate may be subject to local government control. In treatment municipalities, then, the expected benefits of winning local elections (and thus being in charge of the local land office and documentation process) increases, making it worthwhile for more marginal parties to enter the race.

[3]The Wild Cluster Bootstrap requires additively separable errors; even the Score Wild Bootstrap which was developed for nonlinear models may give inconsistent estimates of coefficients (Cameron and Miller, 2015).

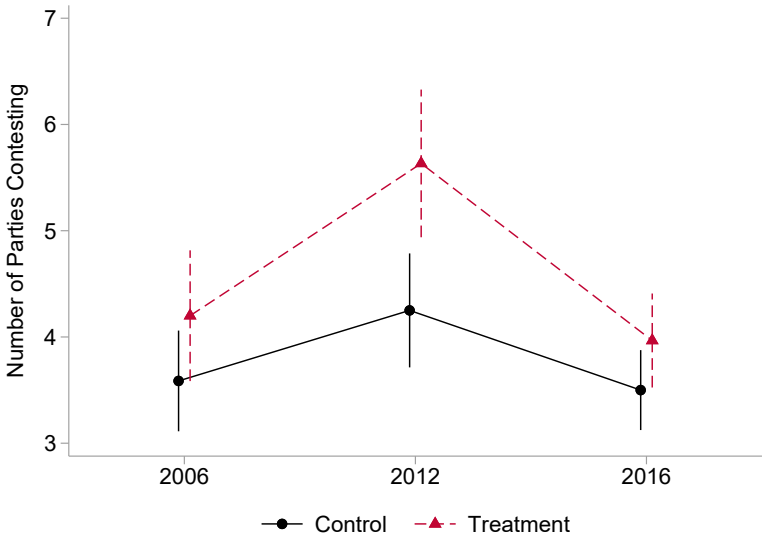

Figure 4: Parties enter when treatment is announced in 2012

However, by the 2016 elections, the number of parties contesting had fallen everywhere in comparison with 2012, with a greater fall in treatment municipalities to bring their numbers back into line with control areas. This is an important result, as land registration was ongoing in the municipal offices in 2016, so it seems reasonable that holding office would continue to be valuable. However, in interviews, some involved with the MCC project suggested that there was a strong emphasis on making the process fair and not subject to political control or elite capture, including participatory land use mapping exercises. If the land offices were in practice not under local political control, then the benefits of holding office are no higher in treatment municipalities. Others suggested that the main avenue for political control was in appointing the SFR staff, who would not change with political turnover after implementation. We shall further explore the implications of these explanations when looking at voter perceptions.

Electoral Competitiveness

Although Tavits (2008) shows that the entry of even uncompetitive political parties can shape the political environment, in a system like Burkina Faso's historically dominated by one-party rule, it is interesting to see if the new parties induced to enter by the announcement of land offices do in fact change the electoral competitiveness of elections. That is, do voters face a greater choice of

VARIABLES	(1) Parties Contesting	(2) Parties Contesting	(3) Parties Contesting
Treatment	0.614	0.633*	0.636*
	(0.441)	(0.337)	(0.337)
2012	0.664	0.635*	0.629*
	(0.448)	(0.347)	(0.347)
Treatment*2012	0.770	0.798*	0.805*
	(0.626)	(0.441)	(0.440)
2016	-0.750*	-0.737***	-0.734***
	(0.452)	(0.247)	(0.246)
Treatment*2016	-0.917	-0.930**	-0.933**
	(0.629)	(0.371)	(0.369)
Constant	3.586***	3.586***	3.583***
	(0.314)	(0.283)	(0.219)
Observations	175	175	175
R-squared	0.154		0.281
Pair FE	No	No	Yes
Cluster SE	None	Pair	Pair
Number of comp		29	29

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Data source: CENI Electoral Returns

Table 3: Political parties contest municipal elections when treatment is announced

VARIABLES	(1) Effective # Parties (Votes)	(2) Effective # Parties (Seats)	(3) Parties Winning No Seats	(4) Parties with $\leq$ 10% Vote Share
Treatment	-0.00222	-0.0631	0.468	0.803**
	(0.106)	(0.0931)	(0.333)	(0.333)
2012	0.282***	0.133	0.248	0.386
	(0.0979)	(0.0892)	(0.316)	(0.351)
Treatment*2012	0.152	-0.0103	0.318	0.680
	(0.117)	(0.0915)	(0.423)	(0.478)
2016	0.00726	0.104	-0.906***	-0.892***
	(0.111)	(0.109)	(0.237)	(0.266)
Treatment*2016	0.124	0.235	-0.727**	-1.208**
	(0.153)	(0.143)	(0.329)	(0.442)
Constant	1.623***	1.408***	1.208***	1.515***
	(0.0645)	(0.0605)	(0.207)	(0.219)
Observations	175	175	175	175
R-squared	0.221	0.169	0.245	0.342
Number of comp	29	29	29	29
Pair FE	Yes	Yes	Yes	Yes
Cluster SE	Pair	Pair	Pair	Pair

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Data source: CENI Electoral Returns

Table 4: Electoral competitiveness does not seem to increase in treatment municipalities

viable parties in treatment municipalities? An interest in this question can also help us isolate the expected probability of winning office, which Tavits (2006) points to as a key determinant of party entry. Across multiple measures of electoral competitiveness suggested by the literature, I find no evidence that treatment municipalities became more competitive politically.

Effective Number of Parties

One primary measure of political competition is the effective number of parties, constructed in a similar manner to measures of market competition such as Herfindahl-Hirschman indices. The effective number of parties can be computed either using the number of votes or seats won, which have slightly different interpretations. The former measures how competitive parties are in winning voters, while the latter combines this with structural factors that determine how votes are translated into seats.

The classic measure of the effective number of parties was proposed by Laakso & Taagepera in 1979, which is equivalent to an inverse Simpson index of diversity. However, Golosov (2010) proposes

an alternative which performs better in highly fragmented or highly concentrated party systems:

$$N = \sum_{i=1}^{n} \frac{p_i}{p_i + p_1^2 - p_i^2}$$

Where n is the number of parties with at least one vote, p_i is a given party's proportion of all votes (seats) won, and p_1 is the largest party's vote (seat) share.

Results for the Golosov effective number of parties are presented in columns (1) (computed using vote shares) and (2) (computed using seat shares) of table 4. Other measures are also presented in table A7, in the appendix. Regardless of the measure used, however, we do not see significant differences between treatment and control municipalities, and the magnitudes are also relatively small. Therefore, although more parties compete in treatment municipalities in 2012, they do not seem to make the elections meaningfully more competitive.

Small Parties

There are other potential ways to look at the expected probability that any potential party entrant wins. One is to see what number of parties fail to win any council seats (possible in multi-seat elections such as these), as shown in column (3) of table 4. Another is to take advantage of a constitutional clause on the funding of political campaigns: all parties must pay a deposit to be included on the ballot, which entitles them to some public campaign funding; if they receive 10% of votes in the election, then they are reimbursed their deposit. Although this deposit is not large for municipal elections, it may be economically substantial in rural areas. Therefore, we can consider the number of parties that fail to reach this 10% threshold as electorally uncompetitive, in column (4).

When we look at either of these measures, although we do not see statistical significance for the positive difference between treatment and control in 2012, we do find a larger decrease in 2016 for treatment municipalities. When we examine these results graphically in figure 5, we see a similar pattern to that for the number of parties: in 2012, treatment municipalities have more parties that fail to reach the 10% vote share threshold. Therefore, although we see more parties competing in elections, it seems clear that they largely are not presenting a serious challenge to the dominant parties.

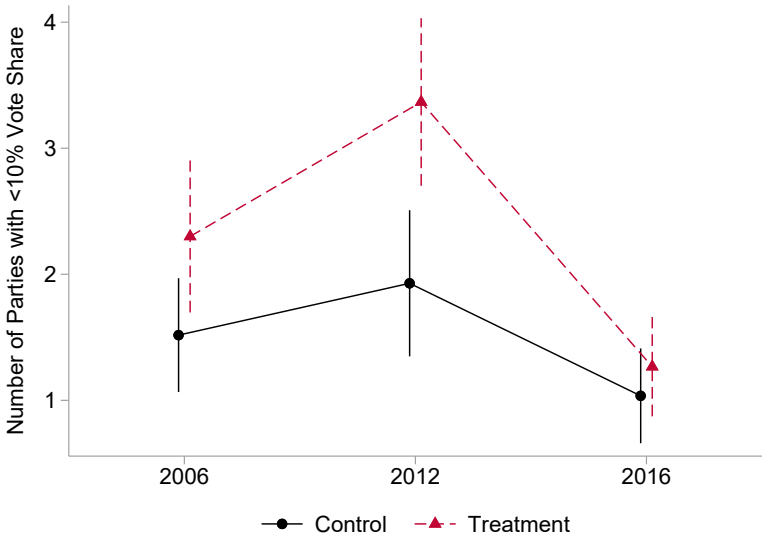

Figure 5: Parties entering in response to treatment in 2012 fail to reach the 10% vote share for reimbursement

Party Alliances

Although the results presented so far are consistent with independently-competing political parties attempting to win representation, the potential for party alliances may add another layer of complexity to the calculations made by political actors. Although it is difficult to track municipal-level alliances between parties, which are often informal support arrangements, there is qualitative evidence that smaller parties ally with (usually ruling) larger parties in determining policy platforms and while governing. In Burkina Faso, parties often split prior to elections due to personality differences at multiple levels of the party hierarchy. This is particularly common as most parties do not offer distinct policy positions or agendas, and rarely compete on the basis of platforms.

It would be interesting to explore what the incentives are for political actors who are considering how best to gain access to power and political resources. They could simply join the ruling party for the election and work within its hierarchy, rather than running against it and the later forming an alliance.

It seems plausible that in elections dominated by one party, the best strategy for a political actor to access patronage positions or political resources such as the land offices is to join the dominant party and work within it. However, in a newly competitive election, running as an independent party allows the agents to hedge their bets: it is unclear who the winning party will be, so joining

either too early could leave the agent out of power. But by conducting an independent (even if uncompetitive) campaign, the agent is able to demonstrate their role as a political actor who will need to be included in any eventual settlement. And indeed, the 2012 election in particular was perceived as truly competitive for the first time in Burkina Faso's history, at a national level in legislative elections as well as in municipalities. This could explain why we see such a large increase in the number of parties in 2012, when it would have been difficult to predict who would win in a given municipality. By 2016, however, it may have been clearer to political actors who was going to win in the post-upheaval environment dominated by a new national party. Therefore, the desire to control the land offices could incentivize joining the new ruling party, rather than running independently. Because we cannot observe individual candidates, though, this is merely speculative at the moment.

Ruling Party & Main Opposition

Given that most of the new parties competing in municipal elections in response to the announcement of treatment status are uncompetitive, it is instructive to look at the behavior of individual parties that we know to be competitive at a national level. The ruling party nationally between 1993 and 2014 was the CDP, which was affiliated with the president Blaise Compaoré and dominated the legislature and local elections during that time. Indeed, it won more than 70% of seats across all municipalities in the 2006 and 2012 elections. Because this party dominated national politics so thoroughly, and so was closely involved in the implementation of the Rural Land Governance project, we can assume that the CDP expected the creation of these land offices to benefit them politically, particularly given the announcement of treatment locations immediately before an election where they faced a viable challenge for the first time. This assumption would be in line with the findings of Briggs (2012), that external aid is politically targeted and ruling party electoral performance improves in areas which receive it.

If, then, we look at the CDP's electoral performance, we note some interesting patterns. In 2012, for instance, the CDP's vote share decreases slightly across all municipalities in the study, as expected with a newly viable opposition. However, we see (in table A8) no difference between treatment and control municipalities in this year. We can also consider the extensive margin: does the CDP contest every election? Prior to the popular uprising in 2014, they ran a party list in essentially every municipality in the country. However, in the 2016 elections, they were much less

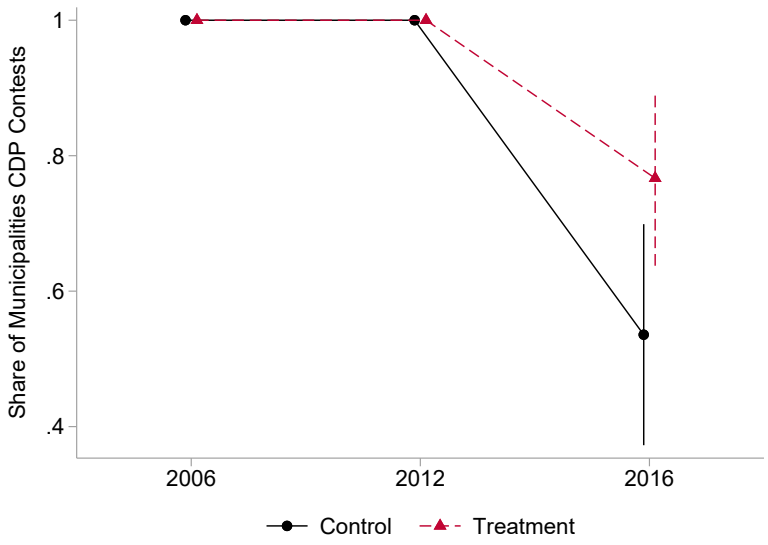

Figure 6: CDP is more likely to contest in treatment municipalities, post-transition

likely to contest nationwide, due to their lost legitimacy. In municipalities where rural land offices had been created, though, this decrease is half the magnitude, as seen in figure 6. This may be because CDP leadership was able to point to the workings of the rural land offices as a positive benefit of CDP tenure, therefore justifying running again by increasing the likelihood of getting elected. In the appendix, I explore whether voters do in fact reward incumbents for their role in the land offices, although sample size constraints make results that account for the extensive margin unstable.

Opposition parties, on the other hand, are much less stable over time in the Burkinabe context. The main substantial opposition to the CDP between 2012 and 2016 (the main period under consideration) was the UPC. However, we see no statistically significant differences in support for the UPC between treatment and control municipalities in either year. The MPP, which broke away from the CDP over the issue of term limits during the 2014 unrest and later won national elections in 2015 ran candidates in municipal elections in 2016; however, I see no significant differences in their performance between treatment and control municipalities that year.

Voter Responses

We are not only concerned with how informed political actors respond to the announcement and creation of land offices: it is also interesting to see how voters respond. One theory would predict that voters observe that local governments will now be in charge of more services, and thus the import of local government leadership increases. This should increase the incentive to vote, so citizens can participate in choosing those who will be responsible for allocating land rights, and so we would expect to see an increase in voter turnout in response to treatment. However, as we shall see, citizens are not more likely to vote in treatment municipalities; in fact, we see the opposite effect. This may be driven by the mediating effect of political parties' behavior discussed above.

Voter Turnout

Although voters' decisions to vote as well as who to vote for are theoretically interesting, the latter is subject to a complex relationship with the strategic decisions made by political parties to gain support; therefore, I first focus on voter turnout as an outcome. The difference-in-difference specification with treatment and matched control municipalities is presented in columns (1) and (2) of table 5, pooled and then with pair fixed effects. We can see that although voter turnout increases substantially in 2012, as expected for a competitive election simultaneous with national legislative elections, this increase is statistically significantly smaller in treatment municipalities. The difference is also relatively large in magnitude, representing 5% of the 2012 control municipality turnout rate (a magnitude similar to the increase in turnout due to get out the vote experiments in the US, as reviewed by Green et al. (2013)). Matched pairs are generally within the same province (a second-tier administrative unit within Burkina Faso within regions), so legislative electoral environments should be similar; therefore, it seems reasonable that differences at the municipality level are driving these results. Turnout in 2016 appears to drop again, although equivalently in treatment and control municipalities.

It does, though, seem difficult to understand voters being less eager to vote in municipalities that will be receiving this local public service. Therefore, I would suggest that unsophisticated voters may not be observing the announcement of treatment status, but they are observing its result: an increase in the number of political parties contesting the election, as demonstrated above. Ballots in Burkina Faso only list party names and symbols; in control municipalities in 2012, most voters are

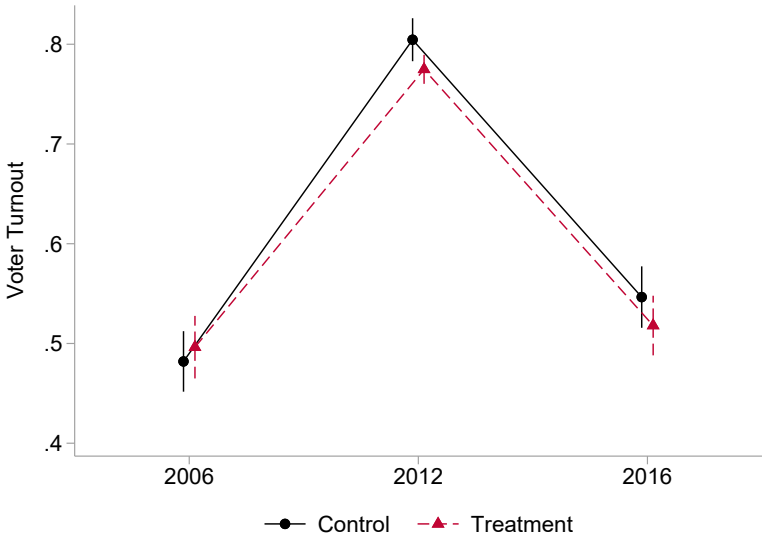

Figure 7: Voter turnout increases less in treatment communes

faced with either 3, 4, or 5 parties, while in treatment municipalities, the average municipality has 5.6 parties contesting, with as many as 10 parties on the ballot, as seen in figure 8. Therefore, we can imagine that the costs of learning about the parties and deciding how to vote may be much higher for citizens in treatment municipalities, leading some to stay home. Indeed, across all municipalities in Burkina Faso, we do see a negative correlation between the number of parties competing and voter turnout (column (3) of table 5 and figure 9). However, this may not be the only factor driving these results, as when I control for the number of political parties in column (4), we still find a significant difference between treatment and control municipalities in 2012.

Voter Registration

There is another potential explanation for the observed decrease in voter turnout in treatment municipalities in 2012: voter registration, the denominator of voter turnout, could have increased. It is unlikely that citizens had time to move to treatment municipalities en masse after the announcement of treatment status before the election, but there could be concerns that these locations were targeted for public services because of recent in-migration, as McMillan et al. (2011) shows happens in Burkina Faso. However, the experimental setup of the pilot phase, where treatment and control status was assigned randomly within targeted pairs of municipalities, allays this concern. Voter

VARIABLES	(1) Voter Turnout	(2) Voter Turnout	(3) Voter Turnout	(4) Voter Registration
Treatment	0.0149		0.0169	524.4
	(0.0231)		(0.0237)	(742.3)
2012	0.323***	0.289***	0.325***	558.2
	(0.0165)	(0.00631)	(0.0162)	(399.7)
Treatment*2012	-0.0441**		-0.0416**	781.1
	(0.0198)		(0.0198)	(704.6)
2016	-0.260***	-0.258***	-0.263***	2,237***
	(0.0152)	(0.00632)	(0.0153)	(337.6)
Treatment*2016	0.00356		0.000675	390.1
	(0.0175)		(0.0163)	(363.8)
Number Parties		-0.00685***	-0.00309	
		(0.000673)	(0.00425)	
Constant	0.482***	0.534***	0.493***	8,183***
	(0.0129)	(0.00548)	(0.0184)	(566.1)
Observations	175	1,089	175	175
R-squared	0.817	0.701	0.818	0.217
Number of comp	29		29	29
Pair FE	Yes	No	Yes	Yes
Cluster SE	Pair	Pair	Pair	Pair

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Data source: CENI Electoral Returns

Table 5: Voter turnout decreases with more parties and in response to the announcement of treatment

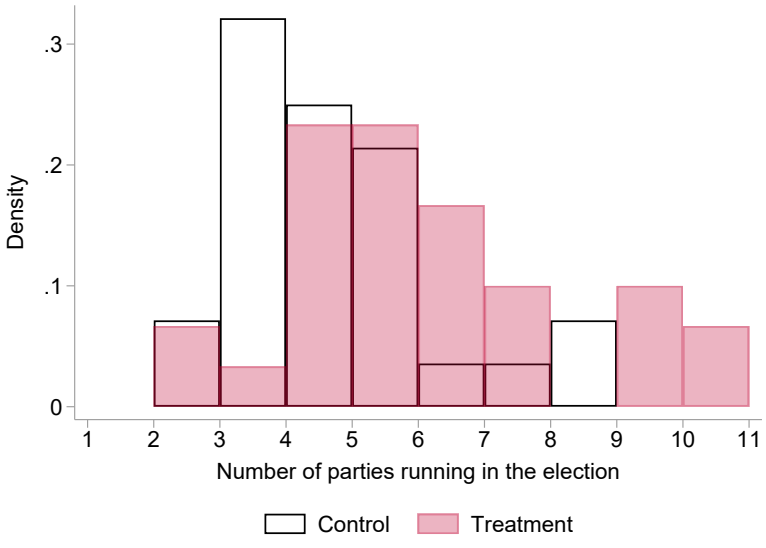

Figure 8: Higher mean and dispersion of parties in treatment areas in 2012

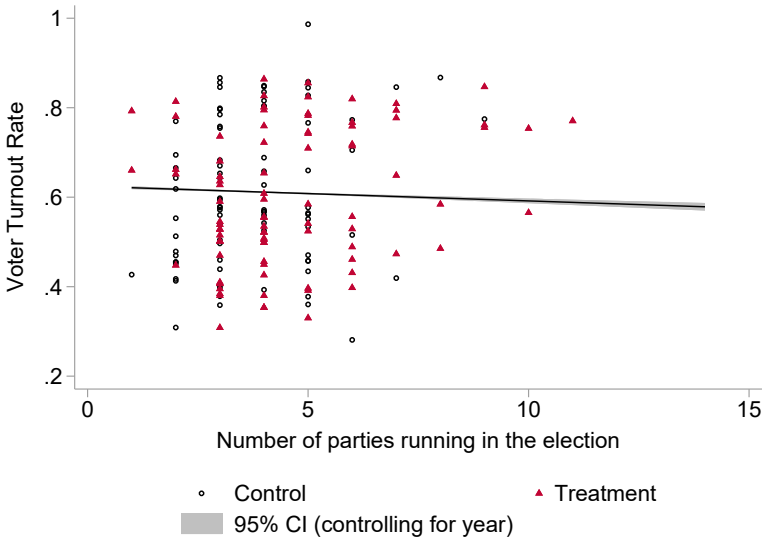

Figure 9: Slight negative relationship between number of parties contesting and voter turnout

registration could also be related to the increase in the number of parties contesting the election: new parties may have encouraged voter registration in their campaigning, but these new voters failed to show up. The 2012 election did entail a large voter-registration drive, led by NGOs (Pryce and Nascimento, 2014), who may also have targeted treatment municipalities. However, I find no differences between treatment and control municipalities in voter registration, casting doubt on this mechanism.

Incumbency

Another potential explanation for the 2012 drop in turnout in treatment municipalities bears exploring. This election saw the emergence of a valid opposition party for the first time, which excited voters nationwide. However, in treatment areas, the CDP had announced that it was bringing a new resource to treatment areas, which would make the opposition relatively less appealing. If voters respond to this increased value of both the CDP and the opposition by staying home rather than voting for either, we could see lower turnout. We would expect this effect to be stronger in municipalities where the CDP was incumbent for the 2012 elections, as it would be easier for voters to attribute the announcement of treatment to the ruling party nationally and locally. This would indicate a negative coefficient on the interaction of treatment and the CDP being incumbent in

columns (2) or (3) of table 6 (as these models exclude 2006, when there is no incumbency history). However, this coefficient is statistically insignificant and close to zero in magnitude, indicating this explanation is not the primary driver of these results.

This model does indicate that after implementation, in 2016, voter turnout is significantly higher in treatment areas where the CDP was incumbent, despite being insignificant overall. These heterogenous effects seem not to be robust to the inclusion of pair fixed effects, but may bear further exploration.

Voter Attitudes and Perceptions

Although election results data do not allow us to closely examine voter responses to the treatment, we can also make use of surveyed voter attitudes and perceptions from the geocoded Afrobarometer survey data. Each survey round is nationally representative, but does not survey respondents in every municipality (and therefore, we do not observe a balanced panel from our study municipalities). However, the timing of these surveys neatly parallels the timeline of the study: one wave was in 2008, prior to the signing of the compact with MCC (and thus should be unaffected by treatment status which was assigned later); the second occurred immediately prior to the 2012 municipal election (so should capture voter's perceptions after treatment status was announced but prior to implementation); and the third wave was in 2015 (after land offices had been created and were functioning). Therefore, we can use a similar difference-in-differences framework to those used above.

First, the Afrobarometer asks many questions about perceptions of corruption in different levels and branches of government. These questions are generally asked in the form "How many government officials [of X group] are corrupt? None of them, Some of them, Most of them, All of them, Don't know." I then recode responses into a binary indicator equal to zero for 'none of them'/'some of them', and equal to one for 'most' or 'all of them'. The primary specifications I report in table 7 use a linear probability model, although I can also use a logit model with experimental pair fixed effects to check robustness. In column (1) of table 7, I look at perceptions of corruption in the office of the president as a placebo check: given that treatment occurred at a local level, we should not expect perceptions of the national government to change substantially. Indeed, we find no significant differences between treatment and control municipalities in any year. In column (2), the question instead asks about corruption among government officials, a category which would include the functionar-

VARIABLES	(1) Voter Turnout	(2) Voter Turnout	(3) Voter Turnout	(4) Voter Turnout
Treatment	-0.0262**	-0.0363	-0.0280	-0.0282
	(0.0131)	(0.0225)	(0.0240)	(0.0238)
CDP Province Support			-0.0381	
			(0.0276)	
Treat*CDP Province Support			0.148***	
			(0.0445)	
Base CDP Province Support				-0.102***
				(0.0284)
Treat*Base CDP Province Support				0.153***
				(0.0447)
CDP Incumbent	-0.0234	-0.0328		
	(0.0174)	(0.0211)		
Treat*CDP Incumbent	-0.00289	0.00949		
	(0.0226)	(0.0322)		
2012			0.336***	0.326***
			(0.0234)	(0.0213)
Treat*2012			-0.0244	-0.0163
			(0.0227)	(0.0228)
2012*CDP Province Support			-0.0213	
			(0.0345)	
Treat*2012*CDP Province Support			-0.0882**	
			(0.0383)	
2012*Base CDP Support				-0.0183
				(0.0315)
Treat*2012*Base CDP Support				-0.0839**
				(0.0398)
2016	-0.234***	-0.246***	-0.293***	-0.266***
	(0.0160)	(0.0163)	(0.0239)	(0.0189)
Treat*2016	-0.0731*	-0.0572	0.0429	0.00367
	(0.0418)	(0.0436)	(0.0351)	(0.0205)
2016*CDP Province Support			0.0745*	
			(0.0374)	
Treat*2016*CDP Province Support			-0.0877*	
			(0.0499)	
2016*CDP Incumbent	-0.0279	-0.0142		
	(0.0254)	(0.0270)		
Treat*2016*CDP Incumbent	0.0869*	0.0684		
	(0.0475)	(0.0512)		
2016*Base CDP Support				0.0280
				(0.0320)
Treat*2016*Base CDP Support				-0.0113
				(0.0352)
Constant	0.824***	0.831***	0.492***	0.510***
	(0.0129)	(0.0146)	(0.0176)	(0.0165)
Observations	116	116	175	175
R-squared		0.874	0.844	0.848
Number of comp	29	29	29	29
Pair FE	No	Yes	Yes	Yes
Cluster SE	Pair	Pair	Pair	Pair

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Data source: GENI Electoral Returns

Table 6: Voter Turnout higher in post-intervention municipalities controlled by the CDP

ies working in newly-created land offices. Interestingly, although there is a statistically-significant difference between treatment and control municipalities at baseline (insignificant with the wider standard errors estimated only using 2008 data in table 2), even controlling for this, there appears to be a statistically-significant increase in the perception of corruption among government officials in treatment municipalities in 2012, while the more heavily contested election campaigns are ongoing, falling back to similar levels as control municipalities in 2015 (after implementation). We see a similar pattern when looking at perceived corruption among local government (municipality) council members in column (3), although results are not statistically significant (bootstrapped p-value = .15). This pattern parallels the results for the number of parties contesting, which supports my interpretation of the observed party behavior as rent-seeking. The observed decrease in perceptions of corruption in 2015 was unsurprising to those involved in the MCC project, as they felt that the Rural Land Governance project had paid particular attention to avoiding corruption, including participatory land use mappings with communities that would prevent elite capture of the land offices. The results in column (3) are perhaps encouraging that concerns about political capture raised by party responses to the announcement of treatment in 2012 can be dealt with effectively.

We can also use the Afrobarometer surveys to test whether pilot land offices were targeted to areas that supported the ruling party, as well as if their presence changed opinions about the CDP or about the need for term limits for the president (the trigger for 18 months of civil unrest in 2014-2015). Table 8 does not support either of these theories, however, as we see no systematic differences between treatment and control municipalities.

Mechanisms: Where is Control of the Land Office more Valuable?

The primary analysis above simply uses the experimental assignment of treatment and control municipalities to look at average treatment effects, which are causally identified. However, it is also interesting and extremely policy-relevant to understand why these effects are happening.

In particular, we are interested in what determines the benefits of controlling decentralized land offices. We can explore this by looking at heterogeneity in effects across different dimensions that may impact the benefits, to see if we can find any differences. At times, cutting our already-small sample may lose too much power to allow us to determine if a given mechanism is at play, but I

	(1) Corruption in President's Office	(2) Corruption in Gov Officials	(3) Corruption in Local Gov
Treatment	-.0698054	-.3111226	-.2588241
	(0.67)	(0.05)	(0.19)
2012	.0110917	-.0632625	-.0878433
	(0.88)	(0.67)	(0.57)
Treatment*2012	.0911531	.2895166	.3102148
	(0.38)	(0.08)	(0.15)
2015	-.0051325	-.0004007	.0708754
	(0.96)	(0.99)	(0.50)
Treatment*2015	-.1661832	-.1386811	-.2395636
	(0.36)	(0.48)	(0.16)
Constant	.3591549	.49182	.3888866
Observations	358	370	388
R^2	0.018	0.039	0.039
Number Clusters	12	12	12
Fixed Effect	Region	Region	Region
Standard Errors	Wild Cluster Bootstrap	Wild Cluster Bootstrap	Wild Cluster Bootstrap
Years Asked	08/12/15	08/12/15	08/12/15

Wild Cluster Bootstrapped p-values in parentheses, cluster at regional level
Data source: Afrobarometer

Table 7: Perceptions of corruption at the local level increase in anticipation of treatment

	(1) Support Term Limit	(2) Trust CDP
Treatment	-.1651713	.163052
	(0.47)	(0.37)
2012	-.023049	-.010422
	(0.94)	(0.92)
Treatment*2012	.1908113	-.0635544
	(0.55)	(0.62)
2015	.1613045	
	(0.13)	
Treatment*2015	.034328	
	(0.69)	
Constant	.7313894	.5162566
Observations	421	229
R^2	0.078	0.013
N_g	12	11
Fixed Effect	Region	Region
Standard Errors	Wild Cluster Bootstrap	Wild Cluster Bootstrap

Wild Cluster Bootstrapped p-values in parentheses, cluster at regional level
Question on Trusting CDP only asked in 2008 & 2012
Data source: Afrobarometer

Table 8: No differential support for Compaoré or term limits

attempt to approach questions from multiple angles to support any findings. In general, I explore heterogeneity in the number of political parties contesting the election, as this result has some of the strongest differences that are least likely to become underpowered.

Looking at mechanisms for my results also entails examining the actual processes of MCC's pilot, which has implications for external validity. Importantly, I find that control municipalities seem to be anticipating receiving land offices during the 2016 elections, which may be why I cannot statistically distinguish political behavior between treatment and control municipalities in that year.

Distance to Urban Areas

Those involved in implementing SFRs in Burkina Faso often highlighted how effective, and politically valuable, the offices were in municipalities near urban areas. Wealthy urbanites desired to purchase land near the city, but the informality of traditional land rights made them reluctant to invest without stronger documentation and legal protections. At the same time, the fact that local councils could independently set and keep fees for documentation meant that these municipalities were able to charge high fees, knowing they would be paid by outsiders. These fees feed into the municipal budget, explicitly increasing the benefits of holding office.

Furthermore, the process of documentation is more significant to landholders in near-urban areas, as explored in the theoretical model. These offices and the policies they enacted had greater welfare import for constituents. Political parties who value constituent welfare are then more likely to contest elections, not only in the hopes of winning office themselves but also to influence the policy platforms of other parties. Therefore, we would expect stronger responses by political actors in municipalities closer to urban areas. These two mechanisms work in the same direction, although I plan to conduct additional analysis with new data sources such as country-wide municipal budgets and surveyed perceptions of tenure security after documentation to tease apart these two mechanisms.

Looking at the 2016 elections, however, we can begin to disentangle the two mechanisms given the predictions of the model. As shown theoretically above, the party entry responses in 2016 are driven primarily by expected (private) rents to holding office: the revenue generated by fees for APFR documents. The role of policy positions in shaping constituent welfare is muted after the initial land use mapping has occurred, and therefore is less likely to enter political parties' calculations. Therefore, differences between treatment and control municipalities after implementation in 2016 can give us an estimate of the relative importance of the private rents mechanism. Interestingly,

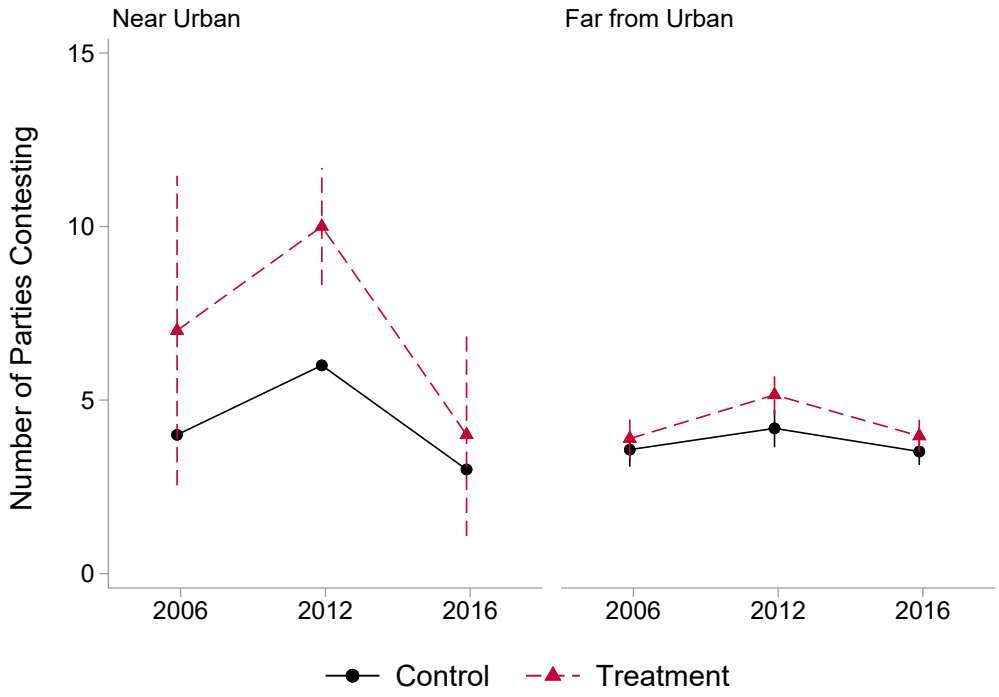

Figure 10: Responses are much stronger in municipalities near urban areas

we see that treatment municipalities return to a similar party environment as their control-group counterparts, suggesting that a concern for constituent welfare may be driving most of the observed difference in 2012. This is encouraging: despite land offices being under local political control, those politicians may not be primarily concerned with their own private gains.

In table 9, I examine this heterogeneity by interacting my treatment effects over time with a dummy for municipalities less than 2 hours travel from urban areas. In columns (2) and (3), we can see that treatment effects are stronger in treatment municipalities further from urban centers, and in particular, the significant decrease in parties contesting the election in treatment municipalities in 2016 is largely driven by municipalities near cities. These patterns are easy to see in figure 10, where muncicipalities closer to urban areas (which face intensified incentives around land offices) respond more clearly to treatment.

VARIABLES	(1) Parties Contesting	(2) Parties Contesting	(3) Parties Contesting
Treatment	0.317	0.404	0.431
	(0.418)	(0.348)	(0.348)
Near-Urban	0.429	0.783*	0.671
	(1.576)	(0.471)	(0.512)
Treatment*Near Urban	2.683	1.737**	1.569**
	(1.836)	(0.690)	(0.587)
2012	0.614	0.588	0.581
	(0.418)	(0.363)	(0.362)
Treatment*2012	0.646	0.671	0.678
	(0.593)	(0.437)	(0.435)
2012*Near Urban	1.386	1.412***	1.419***
	(2.229)	(0.363)	(0.362)
Treatment*2012*Near-Urban	0.354	0.329	0.322
	(2.597)	(1.020)	(1.020)
2016	-0.667	-0.653***	-0.649**
	(0.421)	(0.245)	(0.244)
Treatment*2016	-0.519	-0.532	-0.536
	(0.596)	(0.370)	(0.368)
2016*Near Urban	-2.333	-2.347***	-2.351***
	(2.230)	(0.245)	(0.244)
Treatment*2016*Near Urban	-2.481	-2.468***	-2.464***
	(2.598)	(0.564)	(0.563)
Constant	3.571***	3.559***	3.561***
	(0.293)	(0.297)	(0.243)
Observations	175	175	175
R-squared	0.330		0.370
Pair FE	No	No	Yes
Cluster SE	None	Pair	Pair
Number of comp		29	29

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Data source: CENI Electoral Returns

Table 9: Weaker responses in municipalities far from urban areas

Experimental Setup and Learning

It is also worth exploring whether political actors may be learning from other jurisdictions, given the experimental setup of the decentralization. That is, they may observe another municipality implementing the land office, and its potential political rents, and change their behavior accordingly, rather than responding directly to the incentives. Importantly, this type of mechanism could potentially explain the lack of significant difference between treatment and control areas in 2016[4]: if control municipalities anticipate that they will be next to receive a land office, they may be anticipating future treatment and thus behaving similar to treated municipalities, rather than treatment municipalities' responses not persisting.

Learning from Phase I

Recall that there was a first pilot phase of the RLG project, which implemented land offices in 17 chosen priority municipalities. It may be that local actors in other municipalities observed this earlier implementation, which allowed them to (for example) foresee the political benefits of controlling land offices, and therefore decide to run for office. We would expect this learning to be stronger in municipalities near Phase I municipalities, so in column (1) of table 10, we interact the year and treatment dummies with a dummy for municipalities that are in the same province as a Phase I municipality. However, we find no significant differences in responses by political parties, although we begin to lose power.

Later spillovers

More importantly, however, we must consider whether the fact that treatment and control municipalities are statistically indistinguishable in 2016 on most measures is due not to treatment effects dissipating, but rather that control municipalities are beginning to anticipate their own treatment, and thus behaving more like treated areas. One way to test this is to compare control municipalities with those outside of the study over time, to see if their behavior differs. In columns (2) and (3) of table 10, we regress the number of parties contesting a given municipal election on treatment status (phase II treatment, phase II control, or non-study) and year, clustering errors at the province level.

[4]Note that although the coefficient on Treatment*2016 is significant in my preferred specifications, this is because the dummy for 2012 stays 'on', so this coefficient indicates a drop in treatment municipalities to return to control-group levels from their peak in 2012.

VARIABLES	(1) Parties Contesting	(2) Parties Contesting	(3) Parties Contesting	(4) Parties Contesting	(5) Parties Contesting
Control		-1.459**	-2.511*	-1.582**	-2.089***
		(0.706)	(1.255)	(0.726)	(0.764)
Treatment	0.914	-0.832	-1.818*	-1.090*	-2.195*
	(0.578)	(0.553)	(1.080)	(0.647)	(1.273)
Phase I Province	-0.704				
	(1.027)				
Treatment*Phase I Prov	-0.377				
	(0.712)				
Office in 2017				-1.491**	-1.955*
				(0.643)	(1.139)
Control*Office in 2017				0.926	-1.353
				(0.717)	(1.999)
2012	0.567	0.711***	0.445	0.719***	0.403
	(0.396)	(0.264)	(0.404)	(0.275)	(0.451)
Control*2012		-0.0555	0.171	-0.0369	0.279
		(0.342)	(0.464)	(0.336)	(0.499)
Treatment*2012	0.683	0.723*	0.988*	0.715*	1.031*
	(0.643)	(0.403)	(0.516)	(0.410)	(0.556)
2012*Phase I Province	0.0997				
	(0.691)				
Treatment*2012*Phase I Prov	0.206				
	(0.919)				
2012*Office in 2017				-0.161	0.156
				(0.459)	(0.429)
Control*2012*Office in 2017				-0.0366	-0.806
				(0.903)	(0.755)
2016	-0.578	-1.267***	-1.276***	-1.323***	-1.335***
	(0.378)	(0.177)	(0.178)	(0.207)	(0.207)
Control*2016		0.515**	0.531**	0.563*	0.549*
		(0.259)	(0.246)	(0.316)	(0.309)
Treatment*2016	-0.505	-0.399	-0.390	-0.344	-0.332
	(0.545)	(0.449)	(0.449)	(0.459)	(0.458)
2016*Phase I Province	-0.289				
	(0.500)				
Treatment*2016*Phase I Prov	-0.684				
	(0.728)				
2016*Office in 2017				0.370	0.382
				(0.276)	(0.275)
Control*2016*Office in 2017				-0.237	0.230
				(0.519)	(0.604)
Constant	3.957***	4.833***	5.265***	5.073***	5.596***
	(0.614)	(0.702)	(0.406)	(0.794)	(0.574)
Observations	175	990	990	990	990
R-squared	0.309		0.079		0.120
Number of comp	29				
FE	Pair	None	Province	None	Province
Cluster SE	Pair	Province	Province	Province	Province
Number of Clusters		45	45	45	45

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Data source: CENI Electoral Returns

Table 10: Little learning from Phase I, but control areas may be anticipating treatment in 2016

In column (3), I also include province-fixed effects, as there are no experimental pairs for municipalities outside of the phase II study. Interestingly, we do see a positive and significant effect for control municipalities in 2016: that is, similar to how treatment municipalities behaved in 2012 when they were anticipating treatment. This is a very important, although not perfectly causal, result worthy of further exploration. Although there is some evidence that MCC did control opportunities for political capture of new land offices effectively, particularly local perceptions of corruption, it may not entirely explain the similarities between treatment and control municipalities in 2016. There may still be some political competition to be in charge of land offices in treatment areas, while control areas are beginning their own contests in anticipation of future offices.

In columns (4) and (5) of table 10, I also interact variables with whether a control municipality was slated to receive a land office in 2017. These municipalities may have had some knowledge of future interventions, although I have not found any pre-election announcements of these locations. We might expect, however, that these offices would show a political response in 2016 if they did anticipate their own land offices, but the data do not allow us to conclude whether this was occuring.

Conclusion

In this paper, I have documented significant local political responses to the experimental decentralization of land offices to municipal governments in Burkina Faso. When anticipating treatment in a municipality, political parties are more likely to contest local elections, although these new contestants do not increase competitiveness; there is also a decrease in voter turnout in these municipalities. Responses also seem to vary in ways predicted by theory: where the value of documenting land rights is larger, political actors seem to respond more strongly to treatment. In particular, in rural areas close to cities, where urban-dwellers drive a strong demand for documented land that both increases rents to holding office and the value to constituents of land policy being done well, we see stronger results. These two mechanisms are theoretically distinct, and future work will seek to disentangle private rent-seeking behavior from concerns about constituent welfare that drive political actions. This distinction has important implications for decentralization policies: to what extent is local political control a problem for constituent welfare?

Many of these results seem to diminish in elections after land offices have been created. There is some suggestive evidence that this was due to implementation that was not captured by local political

actors: citizen perceptions of corruption at a local level seem to decrease after implementation. This is an encouraging finding, and if true, suggests that MCC should share best practices with others considering decentralization but worried about elite capture. However, there is also some evidence that the observed results are due to control municipalities anticipating their own treatment and responding to try to control their (future) land offices, which points to a more sobering systematic feature of decentralization.

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Model & Solutions

In this model, we start from a traditional model of party competition (I draw from Bardhan and Mookherjee (2010) and Bardhan and Mookherjee (2000), who draw from a Grossman and Helpman (1996)-style model which is relatively common). However, I add two features to this style of model: first, I allow for party entry rather than assuming 2 parties (modeling party entry with a standard model as in work by Tavits (2006), and secondly, allowing for more than 2 potential parties. There are other minor modifications which I will discuss as they emerge.

To illustrate the intuition, however, I consider the entry decision of a second political party in a context where one party has historically dominated (and always contests the election). The model can easily be extended to allow for multiple challengers to this incumbent.

Setup

Consider a stylized village which has several potential groups of people, with groups denoted by g. Within each village, each class g exists in a share α_g ($\sum_g \alpha_g = 1$, $\alpha_g \geq 0$).

There is an incumbent political party which has historically dominated local politics and therefore faces extremely low costs of contesting elections. These costs are low enough that for any non-zero probability of winning the election, this party (denoted d) always contests the election. A potential challenger can choose to create a political party c and contest local elections, although this is costly (with party-specific costs of running for office C_p).

The benefits of holding elected office are twofold: first, there are private rents that accrue to the officeholder, E_p (which could be nonmonetary, such as prestige, but are increasing in the resources controlled by the local government).

Secondly, parties have intrinsic preferences over the interests of the classes they represent, represented by welfare weights w_g^p on each group g. These enter into the politician's payoff as $\sum_g \alpha_g w_g^p U_g(\theta\pi)$. That is, constituent welfare is important to political entrepreneurs, independent of their private rents from holding office. The parameter θ represents the correlation between *de jure* and *de facto* rights: that is, to turn the policy position π_p of a candidate for office into reality (and this reality is what matters for constituent welfare).

Therefore, if a party p wins office, their benefits of holding office are given by $E_p + \sum_g \alpha_g w_g^p U_g(\theta\pi_p)$ and if they lose office to party q, their payoff is $\sum_g \alpha_g w_g^p U_g(\theta\pi_q)$. Therefore, the challenger c will

choose to contest the election against the incumbent d if:

$$\psi_c \left[E_c + \sum_g \alpha_g w_g^c U_g(\theta \pi_c) \right] + (1 - \psi_c) \left[\sum_g \alpha_g w_g^c U_g(\theta \pi_d) \right] - C_c \geq \sum_g \alpha_g w_g^c U_g(\theta \pi_d) \qquad (1)$$

Where ψ_c is the probability of party c winning the election, as in a standard Tavits-style model of party entry. ψ_c is an increasing, continuously-differentiable function of V_c, the vote share won by that party. However, parties have some uncertainty about ψ_c, so (for instance) a party which expects to win 49% of votes may, in some circumstances, still contest the election.

Politically-informed voters choose who to vote for based on their expected utilities if governed by each party and their (randomly distributed) loyalty towards the incumbent party, v_g. This loyalty has a group-specific distribution [note: either assume normal or uniform]. Therefore, voters of group g vote for party c over the incumbent d if $U_g(\theta \pi_c) \geq U_g(\theta \pi_d) + v_g$, where π_p is the policy choice of party p.

I solve for party entry and policy choice using backwards induction: parties consider how their entry and policies will affect voter choice, and maximize their own payoffs with this in mind. Therefore, I begin with voter choices before modeling the party decisions. The order of party decisions is as follows: first, the challenger decides both whether or not to contest the election and what their policy, π_c, will be. Then, the incumbent party (which always contests) announces their own policy, π_d.

Pre-Reform Solutions

Before the announcement of the land administration decentralization, assume that local governments are constrained to follow central government policy directives. Therefore, π_p is the same regardless of the election result.

Informed voters of group g, then, vote for the challenger over the incumbent if $0 \geq v_g$. This gives a vote share to the challenger of:

$$V_c = \sum_g \alpha_g \int_{-\infty}^{0} v_g dv_g$$

Noting once again that policy choices are irrelevant, the challenger will choose to contest the election if:

$$\psi_c \left(\sum_g \alpha_g \int_{-\infty}^{0} v_g dv_g \right) [E_c] - C_c \geq 0$$

An intuitive result: they will only contest the election if the expected benefits of winning are greater than the costs of contesting. Note that if the average loyalty to the incumbent is positive ($\overline{v_g} \geq 0$), the probability of winning office is relatively low. Therefore in many cases, the challenger will not contest the election, resulting in the uncompetitive electoral environment we observe before the introduction of the land reform.

Reform Announcement Solutions

When a municipality learns that it will receive a land office in the next electoral term, however, the policies implemented by the next election's winner become meaningful to both voters and politicians. Land offices in Burkina Faso were designed to be locally controlled, unlike the deconcentrated municipal services which operated under direction from the central government. The decisions made during the land documentation process could matter substantially to constituent well-being: fair documentation of rights should improve tenure security (with well-explored theoretical and empirical implications for agricultural investment as well as improved access to rental and credit markets), but an unscrupulous actor could take the opportunity to claim documents for land they do not have (primary) rights to.

In this case, then, voters will choose the challenger if:

$$U_g(\theta\pi_c) \geq U_g(\theta\pi_d) + v_g$$

Which gives a vote share for the challenger of:

$$V_c = \sum_g \alpha_g \int_{-\infty}^{U_g(\theta\pi_c) - U_g(\theta\pi_d)} v_g dv_g$$

Which, if voters are made better off under π_c than under π_d, is higher than in the pre-reform case. More accurately, party c can attract more voters of group g by campaigning on a platform that favors them in the land reform; if this platform is redistributional and makes voters of group h off, then they will lose voters of group h.

Moving backwards, the incumbent then sets their policy π_d (conditional on the entry and policy

choices of the challenger). There are two relevant cases for the incumbent to consider.

First, if the challenger is not contesting the election, then the incumbent seeks to maximize:

$$\max_{\pi_d} \left[E_d + \sum_g \alpha_g w_g^d U_g(\theta \pi_d) \right] - C_d$$

As they are guaranteed to win office. Denote the solution to this problem π_{0d}^*.

If, however, the challenger has announced that they will contest the election with a platform of π_c^* (optimally solved below), then the incumbent will maximize:

$$\max_{\pi_d} \left(1 - \psi_c(V_c(\pi_c^*, \pi_d))\right) \left[E_d + \sum_g \alpha_g w_g^d U_g(\theta \pi_d) \right] + \psi_c(V_c(\pi_c^*, \pi_d)) \left[\sum_g \alpha_g w_g^d U_g(\theta \pi_c^*) \right] - C_d$$

Denote this solution as $\pi_{1d}^*(\pi_c^*)$.

Turning to the challenger, if they decide to contest the election, they anticipate the response function $\pi_{1d}^*(\pi_c)$ and maximize:

$$\max_{pi_c} \psi_c(V_c(\pi_c, \pi_{1d}^*(\pi_c))) \left[E_c + \sum_g \alpha_g w_g^c U_g(\theta \pi_c) \right] + (1 - \psi_c(V_c(\pi_c, \pi_{1d}^*(\pi_c))) \left[\sum_g \alpha_g w_g^c U_g(\theta \pi_{1d}^*(\pi_c)) \right] - C_c$$

Which is optimally solved by π_c^*.

The challenger will then compare their expected payoff if they enter and set π_c^* with their payoff if they choose not to contest:

$$\sum_g \alpha_g w_g^c U_g(\theta \pi_{0d}^*)$$

And choose the entry decision that gives them a higher payoff.

Simplified Two-Group Case

For simplicity, imagine that there are only two groups in the population. One group, f, are ordinary farmers who cultivate an individual plot of land and would prefer that the land office merely document their existing rights to the land. The second group, e, are local elites who under customary tenure arrangements have some secondary rights over farms cultivated by the f type (for instance,

e types hold transfer rights while f types hold use rights over the same piece of land). There are more farmers than elites: $\alpha_f > \alpha_e$. These elites would prefer that the land office document their rights instead of those held by the farmers. If we represent the policy choice π_p as denoting the extent to which the documentation process favors the elites, with $\pi = 1$ only documenting all rights as belonging to the elites and $\pi = 0$ documenting all rights as belonging to farmers, $U_e'(\pi) > 0$ and $U_f'(\pi) < 0$.

Therefore, the vote share for the challenger (if they contest) is:

$$V_c = \alpha_f \int_{-\infty}^{U_f(\theta\pi_c)-U_f(\theta\pi_d)} v_f dv_f + (1-\alpha_f) \int_{-\infty}^{U_e(\theta\pi_c)-U_e(\theta\pi_d)} v_e dv_e$$

Note that because the utilities of each group are opposed, for any given policy set by the challenger π_c, if the incumbent sets $\pi_d > \pi_c$, more elite voters will choose the incumbent (and vice-versa).

Assume further that the elites and the incumbent party are naturally affiliated ($w_e^d > w_f^d$), and the challengers value the welfare of the farmers more ($w_e^c < w_f^c$).

If the challenger does not contest the election, the incumbent will solve:

$$\max_{\pi_d} \left[E_d + \alpha_f w_f^d U_f(\theta\pi_d) + (1-\alpha_f) w_e^d U_e(\theta\pi_d)\right] - C_d$$

π_{0d}^*, then, solves the first order condition:

$$\alpha_f w_f^d \theta \frac{\partial U_f}{\partial \pi_d} + (1-\alpha_f) w_e^d \theta \frac{\partial U_e}{\partial \pi_d} = 0$$

If the challenger does contest the election and announces π_c^*, the incumbent will solve:

$$\max_{\pi_d} (1-\psi_c(V_c)) \left[E_d + \sum_g \alpha_g w_g^d U_g(\theta\pi_d)\right] + \psi_c(V_c) \left[\sum_g \alpha_g w_g^d U_g(\theta\pi_c^*)\right] - C_d$$

When we take the first order condition to solve for π_{1d}^*, we find:

$$\begin{aligned} 0 =& \alpha_f w_f^d \theta \frac{\partial U_f}{\partial \pi_d} + (1-\alpha_f) w_e^d \theta \frac{\partial U_e}{\partial \pi_d} - \frac{\partial \psi_c}{\partial V_c}\frac{\partial V_c}{\partial \pi_d}\left[E_d + \alpha_f w_f^d U_f(\theta\pi_d) + (1-\alpha_f) w_e^d U_e(\theta\pi_d)\right] \\ & - \psi_c(V_c)\left[\alpha_f w_f^d \theta \frac{\partial U_f}{\partial \pi_d} + (1-\alpha_f) w_e^d \theta \frac{\partial U_e}{\partial \pi_d}\right] + \frac{\partial \psi_c}{\partial V_c}\frac{\partial V_c}{\partial \pi_d}\left[\alpha_f w_f^d U_f(\theta\pi_c) + (1-\alpha_f) w_e^d U_e(\theta\pi_c)\right] \end{aligned}$$

Which we can rewrite as:

$$
\begin{aligned}
0 =&(1-\psi_c(V_c))\left[\alpha_f w_f^d \theta \frac{\partial U_f}{\partial \pi_d} + (1-\alpha_f) w_e^d \theta \frac{\partial U_e}{\partial \pi_d}\right] \\
&-\frac{\partial \psi_c}{\partial V_c}\frac{\partial V_c}{\partial \pi_d}\left[E_d + \alpha_f w_f^d [U_f(\theta\pi_d) - U_f(\theta\pi_c)] + (1-\alpha_f) w_e^d [U_e(\theta\pi_d) - U_e(\theta\pi_c)]\right]
\end{aligned}
$$

Note that the term inside the brackets on the first line of this condition is exactly the first order condition from the uncompetitive case. We can use this to show that if $\pi_c < \pi_{0d}^*$ (that is, the challenger proposes a policy more favorable to farmers than the uncompetitive policy chosen by the incumbent), that the incumbent will shift their own optimal policy: $\pi_{0d}^* > \pi_{1d}^*(\pi_c)$.

Intuitively, in order to win some votes from farmers and therefore be competitive, the incumbents will respond to the policy proposal of the challenger by moderating their own policy stance.

Heterogeneity: Municipalities Near Cities

The simple two-group case discussed above previews some of the tensions inherent in the land documentation process, which become increasingly important in municipalities close to cities.

I will refer to these rural areas that are reasonably close to (rapidly growing) cities as 'near-urban' for concision, but it is important to note that they are predominantly rural in themselves. That is, local constituents are engaged in a primarily rural way of life. However, urban residents are increasingly seeking to purchase rural land near their city homes, as a source of insurance, connection to the countryside, or vacation home. These urban residents may have extended family in other regions of the country, but seek a closer rural retreat. This also implies that they likely have little or no connection with the inhabitants of the nearby rural municipalities they seek to buy land in. Two important implications stem from this fact: first, we can ignore them as constituents in either voting behavior or politicians' preferences, and second, they have a relatively higher demand for clearly-documented land.

This latter point is crucial. Rural residents are embedded in the same social environment as their customary land rights: the individual who holds secondary (access, transfer, etc) rights to your farm plot is your neighbor, uncle, or friend. As documented in a substantial body of qualitative evidence, this also means that bundles of rights being distributed across multiple individuals does not in itself make those rights less secure. However, an outsider to this social system will struggle

to parse its property rights. Therefore, the value of clearly documented rights, backed by the legal framework of the state (as opposed to the social environment), is higher for outsiders to the community, particularly those seeking land for part-time use who may never become part of the community.

Urbanites seeking land in nearby rural areas have a higher relative demand for documentation, then. They are willing to pay higher fees to cover the cost of documents. The decentralized SFR offices, then, can set higher fees for APFR documents if they are near urban areas, to tap this higher willingness to pay. These fees become part of the municipal budget, which local elected officials can take advantage of. In the context of the model, this can be represented as a larger increase in E_p in near-urban areas when the land offices are introduced. The entry condition for the challenger, given by

$$\psi_c(V_c)\left[E_c + \sum_g \alpha_g w_g^c U_g(\theta\pi_c)\right] + (1 - \psi_c(V_c)\left[\sum_g \alpha_g U_g(\theta\pi_{1d}^*)\right] - C_c \geq \sum_g \alpha_g w_g^c U_g(\theta\pi_{0d}^*)$$

Is more likely to be satisfied as E_c increases. The model therefore predicts more party entry in response to the announcement of treatment in near-urban municipalities. This is a relatively straightforward story of political rents: the rents of holding office increase more in near-urban areas due to higher willingness to pay for documentation by outsiders, and so we see a political response.

This model also demonstrates another mechanism by which the introduction of land offices in near-urban areas leads to a greater response by political parties choosing to contest the election. Parties also care about the welfare of their constituents, as captured by the payoff term $\sum_g \alpha_g w_g^p U_g(\theta\pi)$ (and not only their own private rents, E_p). If constituents' utility responds more to policy in near-urban areas, then the value of contesting the election is higher in near-urban areas set to receive a land office.

To understand why constituents may care more about land documentation policy in near-urban areas, consider the role of policy in a general sense. In an isolated rural environment, if the documents created by SFRs exclude secondary rightsholders, or is granted to an individual without primary use rights, there are relatively few consequences. Without a strong permeation of the state's legal system and enforcement (that is, a low θ), the individual who holds socially-sanctioned customary rights will continue to exercise them, regardless of what documents say. However, in near-urban

municipalities, the risks of the documentation process become larger. Imagine that documents are granted to a secondary rightsholder who is not the primary user of the land. They then sell this land to an urbanite, who accepts the document at face value as indicating they are the appropriate person to sell the land. The urbanite is able to enforce their legal rights, through better access to the formal (state) justice system. This dynamic is captured in the model as an increase in θ, the efficacy of the policy: the land documentation process has larger effects in near-urban areas than in more remote ones where a policy may be blunted. Returning to the two-group simplified case detailed above, we can also see that elites would have more incentive to control the documentation process and have land documented in their name, as they can sell it on to outsiders.

Formally, an increase in *theta* will also cause relatively more political entrants to contest elections in municipalities near urban areas in response to the reform. This is not only due to the higher weight on the constituent-welfare component of the politicians' payoffs: the strategic interactions of policy choices explored above also become more important.

I have shown two mechanisms by which potential candidates in municipalities close to urban areas will respond more strongly to the creation of land offices than their counterparts further away. Both of these mechanisms stem from urban outsiders' demand for land and their inability to navigate the nuanced social complexities of customary tenure. Despite having the same net effect, the two mechanisms are theoretically distinct: the latter goes beyond private rents to account for politicians valuing their constituent welfare. In a later section, I explore ways to empirically distinguish between these mechanisms.

Additional Balance Tables

Experimental, Non-Experimental, and Never-treated Municipalities

To examine external validity, I present balance tables which compare experimental (phase II) treatment municipalities to municipalities which received treatment under a non-experimental program (either Phase I or non-MCC programs after 2015), as well as to all other municipalities which never received a land office. Table A1 presents balance on variables included in the election returns, and table A2 presesnts balance on variables included in the Afrobarometer surveys.

Variable	(1) Non-experimental Treatment Mean/SE	(2) Experimental[1] Treatment Mean/SE	(3) Never Treated Mean/SE	T-test Difference (1)-(2)	(1)-(3)
Seats Available	54.869	44.633	47.855	10.236	7.014*
	(3.222)	(4.008)	(2.217)		
Registered Voters	10299.131	8658.100	10976.860	1641.031	-677.729
	(689.234)	(750.101)	(1018.567)		
Voter turnout rate	0.501	0.496	0.504	0.005	-0.003
	(0.008)	(0.019)	(0.007)		
Parties Contesting	3.925	4.200	5.109	-0.275	-1.183**
	(0.213)	(0.357)	(0.373)		
Effective # Parties (votes)	2.129	2.163	2.471	-0.034	-0.342**
	(0.061)	(0.108)	(0.103)		
Pastoralist	0.449	0.600	0.425	-0.151	0.023
	(0.048)	(0.091)	(0.033)		
Far from Urban	0.467	0.333	0.380	0.134	0.087
	(0.048)	(0.088)	(0.033)		
N	107	30	221		

Notes: The value displayed for t-tests are the differences in the means across the groups. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level.
Data source: CENI Electoral Returns
[1]: Experimental refers to only MCC Phase II treatment municipalities.

Table A1: Experimental treatment municipalities seem broadly similar to other municipalities which received land offices, but some differences between non-experimental treatment and never treated.

	Non-experimental Treatment Mean/CI	Experimental[1] Treatment Mean/CI	Never treated Never treated Mean/CI	T-test Difference (1)-(2)	(1)-(3)
All/most corrupt: president	0.17 (0.01 - 0.32)	0.33 (-0.47 - 0.93)	0.21 (0.11 - 0.31)	0.08	-0.01
All/most corrupt: local gov	0.11 (-0.00 - 0.24)	0.30 (-1.17 - 0.83)	0.24 (0.16 - 0.32)	0.15**	-0.02
All/most corrupt: gov officials	0.14 (-0.01 - 0.37)	0.40 (-1.72 - -1.36)	0.24 (0.17 - 0.32)	0.12	-0.05
Trust somewhat/a lot: local gov	0.63 (0.44 - 0.87)	0.68 (0.18 - 2.36)	0.63 (0.50 - 0.76)	0.04	0.01
Leaders should not favor own group	0.40 (0.14 - 0.52)	0.25 (-0.38 - 0.70)	0.35 (0.29 - 0.41)	-0.09	-0.02
Trust CDP	0.57 (0.43 - 0.75)	0.53 (-0.55 - -0.41)	0.51 (0.39 - 0.62)	-0.02	0.04

Notes: The value displayed for t-tests are the differences in the means across the groups. Wild Cluster Bootstrapped standard errors are clustered at the region level. Region fixed effects are included in all estimation regressions. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level.
Data source: Afrobarometer survey
[1]: Experimental refers to only MCC Phase II treatment municipalities.

Table A2: Treatment groups are statistically similar on survey measures at baseline.

Placebo Checks

Despite the random assignment of treatment status, it is worth checking that variables that should not be affected by the announcement of and creation of land offices in municipalities do not change differentially between treatment and control municipalities, to lend support to the causal argument. The electoral returns are relatively sparse in this regard: only the number of seats available in a given municipality, which is determined by a formula, is a good placebo. However, table A3 presents the same specification as throughout, with this placebo as the outcome.

In the Afrobarometer data, however, we can look at the provision of other local public goods in the municipality, perceptions of other levels of government and other functionings of government, and opinions about national political issues as placebo checks. Tables A4, A5 and A6 report these checks, respectively, and indeed, we see no treatment effect on any of these outcomes.

VARIABLES	(1) Seats Available	(2) Seats Available	(3) Seats Available
Treatment	-3.470	-3.470	-3.470
	(4.409)	(5.597)	(5.597)
2012	1.825	1.825	1.979
	(4.488)	(1.438)	(1.591)
Treatment*2012	-1.492	-1.492	-1.645
	(6.263)	(1.602)	(1.744)
2016	-0.955	-0.955	-1.194
	(4.535)	(1.503)	(1.642)
Treatment*2016	2.889	2.889*	3.128*
	(6.296)	(1.681)	(1.797)
Constant	48.10***	48.10***	48.02***
	(4.720)	(5.271)	(3.003)
Observations	175	175	175
R-squared			0.017
Number of pairs	29	29	29
Pair FE	No	No	Yes
Cluster SE	None	Pair	Pair

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Data source: CENI Electoral Returns

Table A3: Placebo Check: Number of Council Seats Available

	(1) Electricity grid	(2) Piped water	(3) Sewage	(4) School	(5) Police station	(6) Health clinic
Treatment	-.1917588	-.3594043	-.0355205	-.3390796	.5180141	.2306639
	(0.67)	(0.06)	(0.40)	(0.08)	(0.10)	(0.58)
2012	-.1593666	-.1231068	-.0353802	-.0523584	.6888804	.4746795
	(0.68)	(0.73)	(0.41)	(0.55)	(0.08)	(0.35)
Treatment*2012	.3716798	.3631331	.0555865	.3912367	-.5919516	-.3163727
	(0.50)	(0.29)	(0.42)	(0.06)	(0.17)	(0.65)
2015	-.0511418	.7703703	.0251802	.0378365	-.2996438	.0695917
	(0.19)	(0.00)	(0.43)	(0.75)	(0.19)	(0.77)
Treatment*2015	.1321355	.0506836	.0662207	-.1625539	.239895	-.0463234
	(0.62)	(0.86)	(0.47)	(0.60)	(0.27)	(0.95)
Constant	.1741187	.2953581	.018679	1.027353	-.2965989	.2386938
Observations	448	448	448	448	448	448
R^2	0.131	0.763	0.090	0.211	0.206	0.105
Number of regions	12	12	12	12	12	12
Fixed Effect	Region	Region	Region	Region	Region	Region

Wild Cluster Boostrapped p-values in parentheses
Data source: Afrobarometer survey

Table A4: Placebo Check: Public services in Survey Enumeration Areas

	(1) Gov handling crime well	(2) Gov handling health well	(3) Gov handling education well	(4) Gov handling water well
Treatment	-.0741821	.1851171	-.0270661	-.0179442
	(0.71)	(0.32)	(0.87)	(0.93)
2012	-.0551552	.2612381	.1489857	-.1478423
	(0.73)	(0.21)	(0.38)	(0.42)
Treatment*2012	.1355472	-.1597682	-.0196819	.0705859
	(0.51)	(0.39)	(0.92)	(0.69)
2015	.0553903	-.301878	-.2471382	.0595489
	(0.67)	(0.01)	(0.01)	(0.55)
Treatment*2015	-.077262	.0366653	-.1032353	-.2610781
	(0.66)	(0.80)	(0.46)	(0.01)
Constant	.5778868	.3678669	.5515825	.3699182
Observations	407	430	429	430
R^2	0.003	0.056	0.070	0.046
Number of regions	12	12	12	12
Fixed Effects	Region	Region	Region	Region

Wild Cluster Boostrapped p-values in parentheses
Data source: Afrobarometer

Table A5: Placebo Checks: Perceptions of how well the government is providing other public goods

	(1) Opposition parties should cooperate with the government	(2) President should be monitored by NA	(3) Officials often/always go unpunished
Treatment	-.1216905	-.037526	-.1412026
	(0.31)	(0.85)	(0.16)
2012	-.1370136	.1417801	.0055167
	(0.32)	(0.07)	(0.94)
Treatment*2012	.1399332	.080229	.0874819
	(0.41)	(0.60)	(0.39)
2015	.2180273	.0614474	.0764117
	(0.04)	(0.70)	(0.51)
Treatment*2015	-.0476423	-.0146765	.0286156
	(0.77)	(0.92)	(0.85)
Constant	.816052	.6099668	.6981749
Observations	424	424	394
R^2	0.039	0.051	0.026
Number of regions	12	12	12
fe	Region	Region	Region

Wild Cluster Boostrapped p-values in parentheses
Data source: Afrobarometer survey

Table A6: Placebo checks: attitudes about national politics

VARIABLES	(1) Effective # Parties (Votes)	(2) Effective # Parties (Seats)	(3) Effective # Parties (Votes)	(4) Effective # Parties (Seats)
Treatment	0.0122	-0.110	-0.00222	-0.0631
	(0.145)	(0.117)	(0.106)	(0.0931)
2012	0.457***	0.188*	0.282***	0.133
	(0.130)	(0.104)	(0.0979)	(0.0892)
Treatment*2012	0.251	0.0340	0.152	-0.0103
	(0.182)	(0.117)	(0.117)	(0.0915)
2016	-0.148	0.114	0.00726	0.104
	(0.132)	(0.125)	(0.111)	(0.109)
Treatment*2016	0.0521	0.281*	0.124	0.235
	(0.187)	(0.151)	(0.153)	(0.143)
Constant	2.156***	1.624***	1.623***	1.408***
	(0.0808)	(0.0752)	(0.0645)	(0.0605)
Observations	175	175	175	175
R-squared	0.229	0.204	0.221	0.169
Number of comp	29	29	29	29
Pair FE	Yes	Yes	Yes	Yes
Cluster SE	Pair	Pair	Pair	Pair
Measure	Laasko & Taagepera	Laasko & Taagepera	Golosov	Golosov

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Data source: CENI Electoral Returns

Table A7: Two measures of effective numbers of parties

Robustness Checks

Alternate measures of Competitiveness

Although Golosov's method of computing the effective number of parties is preferable when there is a dominant party, the more traditional Laakso & Taagepera formula shows similar results (including the lack of significant differences between treatment and control municipalities in any year).

CDP Performance

Although we saw above that the previously-ruling party, the CDP, was more likely to contest elections in 2016 in those municipalities which had received land offices, despite a large drop in the share of municipalities they contest nationwide, it is interesting to see if there is any difference in voter responses to this party due to treatment. However, a simple regression with the vote share won by the CDP ignores the extensive margin: that is, the outcome is only non-zero in municipalities where

the CDP chose to run. In order to examine the response of the CDP's vote share to treatment, then, we must use a method to account for the extensive margin which determines whether we observe the outcome of interest: that is, whether the CDP contests. A Heckman selection model explicitly models this extensive-margin 'selection' decision, as well as the performance on the outcome of interest. It requires, however, at least one variable to influence the outcome but not participation, so as to separately identify the two equations. I use the CDP's incumbency as this variable: although we would normally anticipate that incumbent parties find it easier to run again, using the levers of state for their own campaign purposes, the 'special delegations' that took over municipal governance in the aftermath of the 2014 unrest mean that the winner of the 2012 elections was not actually in power during the 2016 election campaign. However, Lierl and Holmlund (2019) demonstrate that voters do favor the incumbent party in 2016, as they have more information about their performance. Therefore, it seems reasonable that the vote share received by the CDP will depend to some extent on whether the CDP was incumbent. The results from the Heckman model are shown in columns (3) - (5) of table A8. However, in part because of the small sample size, these models are unstable and in some variations do not converge. The inclusion of the number of parties makes the model stable, and is therefore included.

When we use the Heckman model, we find that there are no significant differences between CDP vote share in treatment and control municipalities, before or after treatment. Therefore, although the party seems to be responding to treatment, it may be that less-informed voters are unable to attribute the land offices to a particular party (consistent with Lierl and Holmlund (2019)'s findings that voters know little about local government performance, even on regularly-used services), or that they do not see the land office as valuable enough to reward politicians for.

Binary Outcomes Model for Afrobarometer Data

The preferred specification for Afrobarometer outcomes presented above uses a Wild Cluster Bootstrap (with a Webb 6-point distribution), with Region fixed effects and clusters at the region level. However, to ensure my results are robust to a variety of modeling choices, I check a variety of alternate specifications. In tables A9 - A13, I show that results are broadly similar across my preferred specification (column (1)), the same bootstrap using survey weights (column (2)), calculating cluster-robust standard errors analytically (columns (3) and (4)). I also have checked robustness to different levels of fixed effects and clustering, as well as to bootstrapping with the Rademacher

VARIABLES	(1) CDP Contest	(2) CDP Vote Share	(3) CDP Vote Share	(4) CDP Contest	(5) /
Treatment	0.00407	0.0226	0.0370	0.0551	
	(0.00394)	(0.0465)	(0.0431)	(0.752)	
2012	0.00488	-0.0892***	-0.0826**	-0.718	
	(0.00505)	(0.0315)	(0.0394)		
Treatment*2012	-0.00488	-0.0210	-0.000751	-0.193	
	(0.00505)	(0.0444)	(0.0488)	(1.170)	
2016	-0.468***	-0.417***	-0.360***	-7.086	
	(0.0973)	(0.0325)	(0.0536)		
Treatment*2016	0.234**	0.0611	0.0282	0.649	
	(0.106)	(0.0441)	(0.0538)		
Number Parties			-0.0243**	0.885***	
			(0.0111)	(0.277)	
CDP Incumbent			0.00963		
			(0.0344)		
athrho					-0.0791
					(0.640)
lnsigma					-2.131***
					(0.0624)
Constant	0.997***	0.609***	0.749***	4.910	
	(0.0229)	(0.0237)	(0.0448)		
Observations	175	175	175	175	175
R-squared	0.354	0.740			
Number of comp	29	29			
Pair FE	Yes	Yes	Yes	Yes	Yes
Cluster SE	Pair	Pair	Pair	Pair	Pair
Model	Linear	Linear	Heckman	Heckman	Heckman

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Data source: CENI Electoral Returns

Table A8: CDP Performance on the extensive and intensive margin

2-point distribution (not presented here), with broadly similar results.

In looking at changes in voter perceptions of corruption using the Afrobarometer data above, I used a linear probability model. However, this does not explicitly account for the binary nature of the outcome variables (whether or not most politicians are corrupt), and therefore does not bound projected probabilities to be between zero and one. In fact, if we add the coefficients of these models, the predicted probability that most government officials are corrupt is negative when including all interactions. Therefore, it is worth considering binary outcome models as a robustness check. This effort is complicated by our desire to control for fixed effects (to account for regional heterogeneity in surveyed attitudes and responses). The nationally-representative sample in each wave of the Afrobarometer does not include respondents in both treatment and control municipalities for a given experimental pair very often, so cluster fixed effects will reduce the number of observations used for identification too much. Additionally, most clusters are observed only in one year, so there is no variation in time; in others, there is no variation between treatment and control municipalities. Therefore, I include fixed effects at the region level, which control for unobserved heterogeneity at a slightly larger level so as to include more municipalities. The results from a logit with regional fixed effects and region-clustered analytic standard errors (as the wild or score cluster bootstraps are inconsistent with the logit) are presented in column (5) of tables A9 - A13.

Although we can see minor differences between the various models, the results overall present a consistent pattern: there is a significant decrease in perceptions of corruption among local government councillors in treatment municipalities in 2015. Although we cannot directly compare the magnitudes of coefficients between a linear probability and logit model, the signs and significances are roughly the same.

	(1) Corruption in President's Office	(2) Corruption in President's Office	(3) Corruption in President's Office	(4) Corruption in President's Office	(5) Corruption in President's Office
Treatment	-.0698054	-.1435174	-.0698054	-.1435174	-.309088
	(0.67)	(0.52)	(0.61)	(0.34)	(0.68)
2012	.0110917	.0362828	.0110917	.0362828	.1445132
	(0.88)	(0.58)	(0.89)	(0.58)	(0.69)
Treatment*2012	.0911531	.1208692	.0911531	.1208692	.3354454
	(0.38)	(0.37)	(0.35)	(0.30)	(0.53)
2015	-.0051325	-.0622281	-.0051325	-.0622281	-.0989417
	(0.96)	(0.62)	(0.96)	(0.54)	(0.85)
Treatment*2015	-.1661832	-.0695833	-.1661832	-.0695833	-.7575623
	(0.36)	(0.67)	(0.29)	(0.64)	(0.36)
Constant	.3591549	.3684992	.3591549	.3684992	
			(0.00)	(0.00)	
Observations	358	358	358	358	358
R^2	0.018	0.110	0.018	0.110	
Number of Regions	12		12		
Fixed Effect	Region	Region	Region	Region	Region
Standard Errors	Wild Bootstrap	Wild Bootstrap	Analytic	Analytic	Analytic
Model	Webb 6-point	Webb 6-point	Linear	Linear	Logit
Weight	Unweighted	Survey weighted	Unweighted	Survey Weighted	Unweighted

Wild Cluster Bootstrapped or Analytic Cluster-Robust p-values in parentheses, cluster at regional level
Data source: Afrobarometer

Table A9: Perceptions of corruption in the President's office results robust to a variety of specifications

	(1) Corruption in Gov Officials	(2) Corruption in Gov Officials	(3) Corruption in Gov Officials	(4) Corruption in Gov Officials	(5) Corruption in Gov Officials
Treatment	-.3111226	-.3494559	-.3111226	-.3494559	-1.480553
	(0.05)	(0.05)	(0.01)	(0.00)	(0.01)
2012	-.0632625	-.0579099	-.0632625	-.0579099	-.1887773
	(0.67)	(0.64)	(0.61)	(0.61)	(0.71)
Treatment*2012	.2895166	.3469639	.2895166	.3469639	1.342956
	(0.08)	(0.04)	(0.06)	(0.01)	(0.05)
2015	-.0004007	-.0080935	-.0004007	-.0080935	-.1054177
	(0.99)	(0.90)	(1.00)	(0.90)	(0.77)
Treatment*2015	-.1386811	-.1407866	-.1386811	-.1407866	-.5054067
	(0.48)	(0.45)	(0.43)	(0.44)	(0.53)
Constant	.49182	.4829131	.49182	.4829131	
			(0.00)	(0.00)	
Observations	370	370	370	370	370
R^2	0.039	0.106	0.039	0.106	
Number of Regions	12		12		
Fixed Effect	Region	Region	Region	Region	Region
Standard Errors	Wild Bootstrap	Wild Bootstrap	Analytic	Analytic	Analytic
Model	Webb 6-point	Webb 6-point	Linear	Linear	Logit
Weight	Unweighted	Survey weighted	Unweighted	Survey Weighted	Unweighted

Wild Cluster Bootstrapped or Analytic Cluster-Robust p-values in parentheses, cluster at regional level
Data source: Afrobarometer

Table A10: Perceptions of corruption among government officials results robust to a variety of specifications

	(1) Corruption in Local Gov	(2) Corruption in Local Gov	(3) Corruption in Local Gov	(4) Corruption in Local Gov	(5) Corruption in Local Gov
Treatment	-.2588241	-.300364	-.2588241	-.300364	-1.372686
	(0.19)	(0.10)	(0.06)	(0.02)	(0.05)
2012	-.0878433	-.0632249	-.0878433	-.0632249	-.3338814
	(0.57)	(0.69)	(0.52)	(0.65)	(0.62)
Treatment*2012	.3102148	.3297491	.3102148	.3297491	1.567829
	(0.15)	(0.12)	(0.06)	(0.05)	(0.06)
2015	.0708754	.0706392	.0708754	.0706392	.2485434
	(0.50)	(0.39)	(0.42)	(0.32)	(0.53)
Treatment*2015	-.2395636	-.2164227	-.2395636	-.2164227	-1.055188
	(0.16)	(0.17)	(0.05)	(0.06)	(0.07)
Constant	.3888866	.3778106	.3888866	.3778106	
			(0.00)	(0.00)	
Observations	388	388	388	388	382
R^2	0.039	0.103	0.039	0.103	
Number of Regions	12		12		
Fixed Effect	Region	Region	Region	Region	Region
Standard Errors	Wild Bootstrap	Wild Bootstrap	Analytic	Analytic	Analytic
Model	Webb 6-point	Webb 6-point	Linear	Linear	Logit
Weight	Unweighted	Survey weighted	Unweighted	Survey Weighted	Unweighted

Wild Cluster Bootstrapped or Analytic Cluster-Robust p-values in parentheses, cluster at regional level
Data source: Afrobarometer

Table A11: Perceptions of corruption in local government results robust to a variety of specifications

	(1)	(2)	(3)	(4)	(5)
	Support term limit	Support term limit	Support term limit	Support term limit	Support term limit
Treatment	-.1651713	-.1950934	-.1651713	-.1950934	-.831091
	(0.47)	(0.40)	(0.27)	(0.25)	(0.23)
2012	-.023049	-.0325595	-.023049	-.0325595	-.1852225
	(0.94)	(0.89)	(0.89)	(0.85)	(0.81)
Treatment*2012	.1908113	.2303963	.1908113	.2303963	.9403277
	(0.55)	(0.41)	(0.31)	(0.25)	(0.28)
2015	.1613045	.2036297	.1613045	.2036297	.9497276
	(0.13)	(0.06)	(0.03)	(0.00)	(0.03)
Treatment*2015	.034328	-.0178935	.034328	-.0178935	.8543751
	(0.69)	(0.80)	(0.69)	(0.81)	(0.29)
Constant	.7313894	.7216691	.7313894	.7216691	
			(0.00)	(0.00)	
Observations	421	421	421	421	413
R^2	0.078	0.105	0.078	0.105	
Number of Regions	12		12		
fe	Region	Region	Region	Region	Region
ses	Wild Bootstrap	Wild Bootstrap	Analytic	Analytic	Analytic
Model	Webb 6-point	Webb 6-point	Linear	Linear	Logit
weight	Unweighted	Survey weighted	Unweighted	Survey Weighted	Unweighted

Wild Cluster Bootstrapped or Analytic Cluster-Robust p-values in parentheses, cluster at regional level
Data source: Afrobarometer

Table A12: Support for a term limit results robust to a variety of specifiations

	(1)	(2)	(3)	(4)	(5)
	Trust CDP	Trust CDP	Trust CDP	Trust CDP	Trust CDP
Treatment	.163052	.1736554	.163052	.1736554	.6694361
	(0.37)	(0.44)	(0.21)	(0.20)	(0.20)
2012	-.010422	-.0214322	-.010422	-.0214322	-.0462453
	(0.92)	(0.84)	(0.94)	(0.87)	(0.93)
Treatment*2012	-.0635544	-.0786591	-.0635544	-.0786591	-.2756045
	(0.62)	(0.56)	(0.69)	(0.62)	(0.68)
Constant	.5162566	.5443258	.5162566	.5443258	
			(0.00)	(0.00)	
Observations	229	229	229	229	226
R^2	0.013	0.089	0.013	0.089	
Number of regions	11		11		
Fixed Effect	Region	Region	Region	Region	Region
Standard Errors	Wild Bootstrap	Wild Bootstrap	Analytic	Analytic	Analytic
Model	Webb 6-point	Webb 6-point	Linear	Linear	Logit
Weight	Unweighted	Survey weighted	Unweighted	Survey Weighted	Unweighted

Wild Cluster Bootstrapped or Analytic Cluster-Robust p-values in parentheses, cluster at regional level
Data source: Afrobarometer

Table A13: Trust in CDP results robust to a variety of specifications