

Appendix for “The Role of Subnational Politicians in Distributive Politics”

On page 1 of this document is a full set of summary statistics (Table 1) for the variables used in the analyses. Pages 2-3 give a more detailed depiction of the size and makeup of voting centers. Pages 4-5 present the results cited in the manuscript for the role of mayors in land grants. Pages 6-9 further probe the plausibility of a turnout strategy.

1 Summary Statistics

The top panel includes variables from a random sample of 200,000 registered voters from Maisanta as well as whether or not they applied for land through INTi. The bottom panel includes data from all INTi land applicants during the period April 2007-February 2009.

Table 1: Summary statistics

Maisanta Sample					
Variable	Mean	Std. Dev.	Min.	Max.	N
Age	47.0100	16.1156	21	106	198354
Misiones	0.1028	0.3037	0	1	200000
log(Rural Population)	6.8592	3.6856	0	11.0235	199516
Poverty Rate	27.6404	10.461	3.83	71.36	199516
% Chávez vote (Centro)	74.1440	11.2455	30.08	100	199999
INTi land applicant	0.0097	0.0981	0	1	200000
Opposition	0.2583	0.4377	0	1	199999
Loyalist	0.1181	0.3227	0	1	200000
PSUV mayor	0.6786	0.467	0	1	199516
PSUV governor	0.5412	0.4983	0	1	199516
INTi Land Applicants					
Variable	Mean	Std. Dev.	Min.	Max.	N
Age	48.0864	12.9493	21	128	122234
Misiones	0.166	0.3721	0	1	122305
log(Rural Population)	8.7179	2.1156	0	11.0235	122267
Poverty Rate	34.7969	10.5241	3.83	71.36	122267
INTi land beneficiary	0.0504	0.2187	0	1	145411
INTi legal review	0.1477	0.3548	0	1	145411
Application Time (months)	10.5808	4.8034	1	23	142144
Opposition	0.2073	0.4053	0	1	122305
Loyalist	0.1226	0.328	0	1	122305
PSUV mayor	0.8479	0.3591	0	1	122267
PSUV governor	0.8157	0.3877	0	1	122267
Abstention	0.4	0.4899	0	1	84752
Adjudication	0.0775	0.2675	0	1	145411
Carta agraria	0.4452	0.497	0	1	145411
Permanency rights	0.3738	0.4838	0	1	145411
Title registration	0.1034	0.3045	0	1	145411
Voters (Centro)	2053.9912	1757.1424	19	10762	122305
Foreigners (Centro)	232.2378	690.3551	0	7939	122305

2 Voting Centers in Rural and Urban Areas

Most of the models in the manuscript compare individuals within voting centers (*centros*) to control for unobserved local heterogeneity that may impact both political preferences and the likelihood of applying for and receiving a land grant through the land reform program. This is because unobserved individual factors such as income are fairly homogenous within a given voting center. As argued by Lander and López Maya (2005, 47), the very small size of voting centers contributes to their “homogenous socioeconomic composition.” Voting centers are often placed in schools or other public buildings in the neighborhood close to a voter’s residence (Wells 1980, 38). This section gives a visual depiction of *centro* size in both urban and rural areas to provide a more concrete sense of what constitutes a *centro*.

There were a total of nearly 8,600 voting centers for the 2004 recall referendum, and an average of 1,400 voters per voting center.¹ The average voting center among land applicants had about 2,000 individuals. As a result, the unit of the voting center is much smaller than a municipality or even a parish, and typically consists of a couple city blocks, part of a small town, or a short stretch of valley.

Figure 1 maps the *Barrio Agricultura* neighborhood within the Petare neighborhood of Caracas as well as the rural parish of Anzoátegui in the Morán municipality of Lara state. The black dots in each part of the figure indicate voting centers. In urban areas such as Petare in Part A of Figure 1, each voting center draws from only a couple of blocks within a neighborhood of the community. In this particular area, which is three to four blocks north to south and five to six blocks east to west, there are eight voting centers. Each voting center therefore draws from two or three blocks. Residents in each voting center therefore largely share common public utilities, schools, roads, parks, security, and services.

Rural areas such as the parish of Anzoátegui in the state of Lara, depicted in Part B of Figure 1, generally have voting centers that draw voters from a small stretch of a valley or a few square miles of plains. In this parish, there are seven voting centers. There are two small towns in this parish (Anzoátegui and Sabana Grande), and one main stretch of valley between these towns that is used for agricultural purposes. Voting centers are located in these small towns as well as in the surrounding valleys, roughly a mile or two apart. The sparsely distributed population in this and similar areas share in common roads, utilities, stores, and often livelihoods.

¹Note that the average number of voters per *centro* is different from the average *centro* size among voters given heterogeneity and that some have only a few voters.

3 The Lesser Role of Mayors in Land Grants

The manuscript discusses whether mayors have less influence over the distribution of land grants than governors; a finding that their political affiliation is less relevant for who receives land than that of governors would support the theory. This section reports the full results discussed in that part of the paper.

Table 2 presents a series of models that examine the role of both mayors and governors in the likelihood that an individual receives a land grant. The Table 2 models are specified similarly to Models 4-6 of Table 3 of the paper, and thus compare individuals within voting centers. However, the baseline categories of comparison in these models are now petition non-signers in voting centers located in municipalities whose mayor's *and* governor's political affiliation corresponds with that of the location of a given voting center. If mayoral political affiliation is less important than that for governors, we should observe that the coefficients for individuals of a particular political affiliation (e.g., loyalists) and with a fixed governor political affiliation (e.g., pro-Chávez) are statistically indistinguishable *across various mayoral political affiliations*. Furthermore, the coefficients by individual/governor political affiliation should be similar in direction to the Table 3 coefficients regardless of the political affiliation of an individual's mayor.

Table 2 largely bears out these expectations, serving as a successful “placebo test” for the theory. Using the Model 3 results, we fail to reject the null hypothesis that the coefficients on loyalists in pro vs. opposition municipalities within states with pro-Chávez governors are statistically different ($p > 0.81$), that the coefficients on loyalists in pro vs. opposition municipalities within opposition states are statistically different ($p > 0.15$), and that the coefficients on opposition individuals in pro vs. opposition municipalities within opposition states are statistically different ($p > 0.69$). Only the coefficients on opposition individuals in pro vs. opposition municipalities within states with pro-Chávez governors are statistically distinguishable. However, and consistent with Table 3, neither of these coefficients is distinguishable from zero.

The Table 2 coefficients are also largely similar in direction and magnitude to the Table 3 coefficients. Loyalists in municipalities with a pro-Chávez mayor within states with a pro-Chávez governor are more likely to receive land grants than petition non-signers in these municipalities; opposition individuals in these municipalities are not. Loyalists in municipalities with a pro-Chávez mayor in states with an opposition governor are less likely to receive land grants; the same is true of opposition individuals in these municipalities (though the latter coefficient is just short of conventional levels of statistical significance in Models 1 and 3). Loyalists in municipalities with an opposition mayor in states with a pro-Chávez governor are more likely to receive land (though again the coefficients are barely shy of statistical significance, perhaps because only 8% of applicants reside in these locales and estimates are somewhat imprecise); opposition individuals in these municipalities are not. The only results that differ in sign from Table 3 are loyalists in municipalities with an opposition mayor in states with an opposition governor. The coefficients are far from significant, however, and data are sparsest in such municipalities; only 7% of applicants reside in these locales.

Table 2: Who Benefits? Logit Analyses of the Role of Political Preferences and Mayors in Receiving Land Grants
(Dependent Variable: Land Reform Beneficiary)

	Matched by voting center		
	Model 1	Model 2	Model 3
Age	0.005*** (0.001)	0.000 (0.002)	0.003** (0.002)
Misiones	0.063 (0.049)	0.087 (0.053)	0.079 (0.054)
Loyalist in Chávez Muni and Chávez State	0.425** (0.170)	0.424** (0.203)	0.403* (0.210)
Opposition in Chávez Muni and Chávez State	0.158 (0.116)	0.230 (0.152)	0.149 (0.150)
Loyalist in Chávez Muni and Opposition State	-0.402** (0.157)	-0.461** (0.189)	-0.441** (0.198)
Opposition in Chávez Muni and Opposition State	-0.147 (0.104)	-0.279** (0.141)	-0.173 (0.138)
Loyalist in Opposition Muni and Chávez State	0.393 (0.255)	0.368 (0.281)	0.351 (0.294)
Opposition in Opposition Muni and Chávez State	-0.090 (0.202)	-0.299 (0.227)	-0.271 (0.214)
Loyalist in Opposition Muni and Opposition State	0.301 (0.257)	0.292 (0.304)	0.220 (0.308)
Opposition in Opposition Muni and Opposition State	0.002 (0.168)	-0.010 (0.216)	-0.047 (0.212)
Time in Application		0.396*** (0.006)	0.432*** (0.008)
Carta Agraria			0.283*** (0.092)
Permanency Rights			0.460*** (0.096)
Title Registration			-1.274*** (0.135)
Voting Center Fixed Effects	YES	YES	YES
Observations	62280	62280	62280

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

Estimations conducted on full sample of land applicants. Standard errors clustered by voting center. Baselines for political variables are petition non-signers in municipalities whose mayor's and governor's political affiliation corresponds with that of the location of a given voting center.

4 Voter Turnout and Land Reform Benefits

Table 3 below investigates whether land grants are being used to turn out loyalists that may otherwise abstain, or simply to reward loyal PSUV supporters such as activists or party officials. The figures below provide tentative evidence on whether turnout attempts are successful or not.

Table 3 examines whether abstainers in those states where grants are unlikely to be disrupted by local politicians - states with pro-Chávez governors - are more likely to become beneficiaries than non-abstainers. Focusing on pro-Chávez states ensures the observed effect is due to government targeting rather than an artifact of the mix of government targeting and potential disruption by opposition politicians. Table 3 displays the results of a series of conditional logit models that group individuals by voting center. A dummy variable from *Maisanta* for abstention is included, which is coded “1” if an individual had ever abstained from voting.

Abstention is insignificant in Model 1, indicating that land grants are not systematically given to activists that have a strong voting record. But because this model does not distinguish Chávez supporters from opponents, Model 2 introduces interaction terms between abstention and whether an individual signed the petition for or against Chávez. The coefficient on abstention now captures petition non-signers that have abstained from voting in the past, and the baseline is petition non-signers who are voters. Model 2 indicates that active PSUV loyalists that are consistent voters are not more likely to receive land grants. Instead, it is pro-Chávez individuals that signed the petition to recall opposition officials but who have a history of non-voting that are more likely to receive land. This is consistent with a core targeting strategy given the importance of turnout. In short, Table 3 suggests that Chávez is engaged in a core voter strategy to enhance turnout as opposed to rewarding loyal activists who are also likely voters.

Were efforts at turnout actually successful? Although data on subsequent beneficiary turnout are unfortunately unavailable, preventing an individual-level analysis, it is possible to examine more aggregated changes in Chávez vote share before and after this set of land grants were given to see whether Chávez support increased more in areas that received more grants. Taken together with the core voter targeting findings, this would be evidence consistent with a successful turnout strategy. However, given the potential impact of other factors such as other government social programs (that may be correlated with land reform) we cannot with certainty attribute changes in vote share specifically to land reform policies.

Using electoral data at the municipal level for the December 2006 presidential elections and September 2010 parliamentary elections, Figure 2 examines the change in Chávez vote share as a function of land grants. Overall Chávez support declined between the 2006 and 2010 elections. There is nonetheless a positive relationship between the change in Chávez vote share and land grants. Figure 2 notes the names of the states and municipalities which experienced higher rates of land reform and greater positive changes in Chávez vote share between 2006 and 2010. Because the figure compares electoral results within municipalities, it holds constant demographic factors that did not change substantially over time. The figure suggests that land reform is likely to have had the greatest political payoffs in states such as Lara, Guárico, and Apure.

Table 3: Who Benefits? Logit Analyses of Political Preferences and Voter Turnout in Receiving Land Grants
(Dependent Variable: Land Reform Beneficiary)

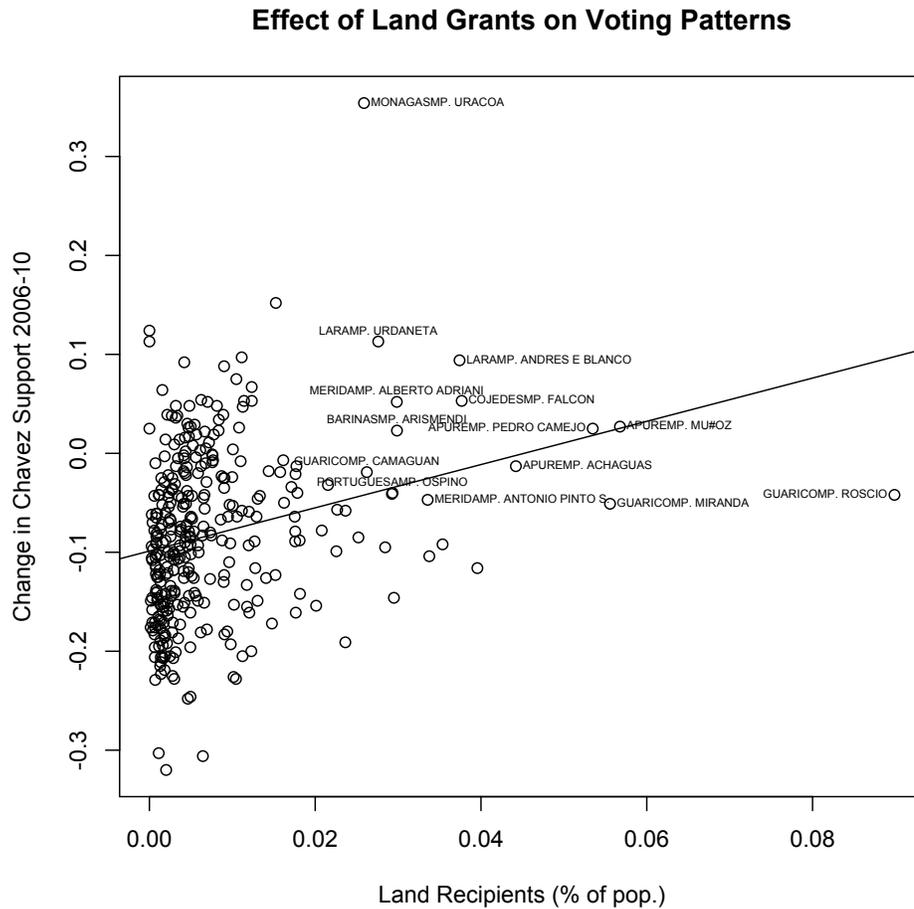
	Matched by voting center	
	Model 1	Model 2
Age	0.003 (0.002)	0.003 (0.002)
Mision	0.095 (0.059)	0.092 (0.060)
Abstention	0.004 (0.057)	-0.086 (0.068)
Loyalist Voter		-0.126 (0.110)
Opposition Voter		-0.125 (0.089)
Loyalist Abstainer		0.304** (0.147)
Opposition Abstainer		0.235 (0.146)
Time in Application	0.431*** (0.011)	0.431*** (0.011)
Carta Agraria	0.338** (0.146)	0.339** (0.146)
Permanency Rights	0.584*** (0.150)	0.586*** (0.150)
Title Registration	-0.427** (0.185)	-0.422** (0.185)
Observations	31635	31635
Voting Center Fixed Effects	YES	YES
Observations	31635	31635

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

Estimations conducted on states with pro-Chávez governors.

Standard errors clustered by voting center. Baseline is petition non-signers who are voters.

Figure 2: Effect of Land Grants on Voting Pattern Changes, 2006-2010



Note: The figure notes the names of the states and municipalities which experienced higher rates of land reform and greater positive changes in Chávez vote share between 2006 and 2010. For each locale, state names are first listed followed “MP.” and then municipal names.

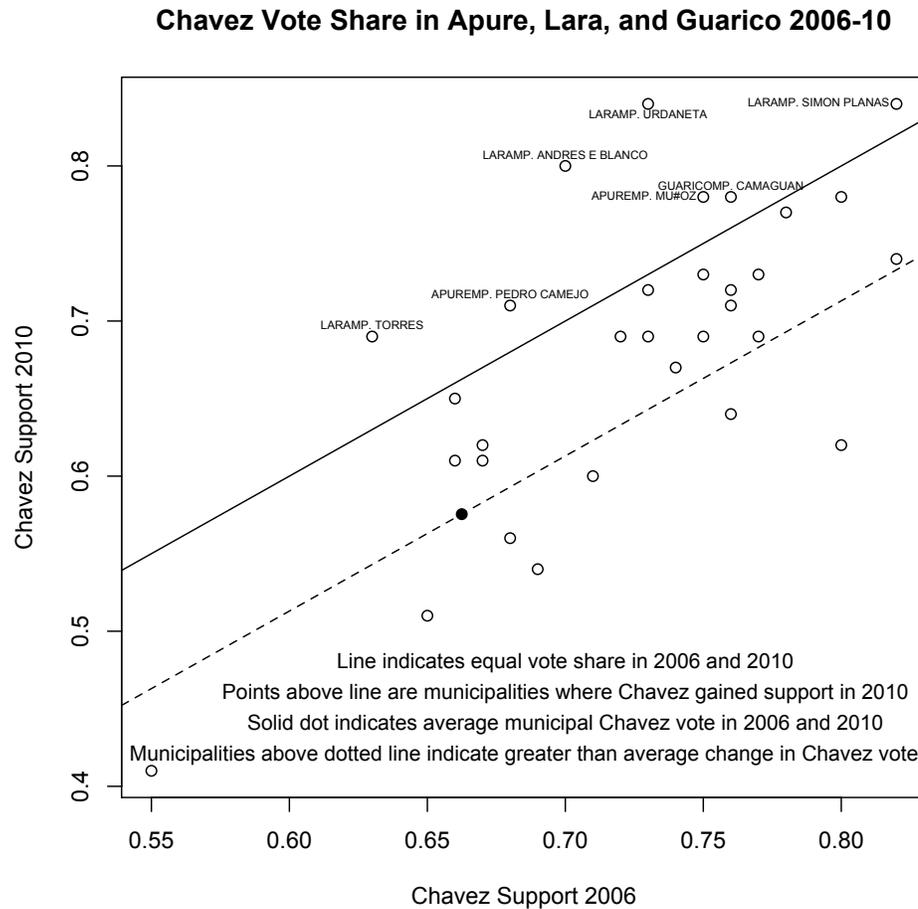
Although the total percentage of land recipients during the period using the INTi data was rather low, it only includes land beneficiaries through INTi from mid 2007-early 2009. As indicated in the manuscript, there are many more individuals (about five times as many) who had applied for land grants that had moved toward the end of the land grant process in 2009 (where these data end) and were likely to have become beneficiaries in 2010. There could have been other beneficiaries in late 2009-2010 as well. Finally, given the size of rural families, several more individuals are typically affected by a land grant than the applicant.

Figure 3 takes a closer look at municipal-level vote share for the PSUV in 2006 and 2010 in Apure, Guárico, and Lara, those states in which the political payoffs may have been greatest as indicated in Figure 2. There are 31 municipalities in these states. Municipalities above the solid line had an absolute increase in Chávez vote share from 2006-2010. The solid dot is the average 2006 and 2010 Chávez vote share in all municipalities, which puts the municipalities in Apure, Guárico, and Lara in perspective relative to the rest of the country. In all of those municipalities which lie above the dotted line, the 2006-10 change in Chávez vote share was more favorable to Chávez than

in the average municipality.

There are several noteworthy trends. First, in most of Apure, Guárico, and Lara, Chávez support is high - around 70%. Second, in these states where there was greater land reform, Chávez did better in 2010 relative to those places where there wasn't as much land reform. The figure highlights the names of municipalities where Chávez had the best turnout in 2010. As indicated by comparing this figure to Figure 2, these are places where land reform was most active.

Figure 3: Chávez Vote Share in Apure, Lara, and Guárico, 2006-2010



Note: For each locale named, state names are first listed followed “MP.” and then municipal names.