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STRATEGIC CAMPAIGNING WITH VOTE AND TURNOUT
BUYING: THEORY AND EVIDENCE

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Theory and Evidence*

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Abstract

In this paper, I model the relationship between potential voters and a politician, who can pay citizens to vote for him – vote buying – or to show up to vote – turnout buying. This model is used to explore the optimal budget allocation across districts, focusing on single-member majoritarian elections in a multi-district environment in which only the incumbent can engage in vote and turnout buying. The results enrich the distributive politics literature by showing that a campaign with direct voting is optimally focused on the opposition strongholds, rather than on swing or core states. I need strong evidence for this result using Argentinian electoral data disaggregated at the booth level, and spending data from a poverty relief program. I show that in the month prior to the 2003 Argentine presidential election, the incumbent party spent more money on groups that were ideologically skewed toward the opposition. Consequently, those districts turned out more, and voted more for the incumbent, who had transferred the money. Furthermore, to isolate actual campaign spending from campaign promises, I use Argentina's 2001 economic and political turmoil as a natural experiment. The empirical evidence confirms that in a single-member district election without an electoral college the incumbent candidate allocates more resources where the marginal cost per vote is lower, that is, in opposition strongholds.

Keywords

Vote buying; voting model; political economy; strategic campaigning; distributive politics.

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Max Weber Fellow, 2011-2012

1 Introduction

Elections are arguably the main institutional feature of any democracy; however, rather than aggregating the preferences of the electorate, electoral outcomes might be suspected of being skewed by other features: the candidates campaign in the form of advertising, spending, campaign promises, persuasion and mobilization strategies, etc. Therefore, understanding the effect of these features also becomes central to understanding the electoral processes. While the existing literature forecasts that candidates focus their efforts either on safe (core) or close (swing) districts, we show that a third hypothesis should also be considered: candidates find it optimal to focus on opposition strongholds in direct majoritarian elections with individually targeted spending.

Generally, campaigns based on mass communication can be easily measured with objective variables (advertising, campaign spending, etc). However in the developing world “campaign efforts” are believed to be concentrated in less institutionalized forms of campaigning, such as the distribution of cash, liquor, food, and other items (Banerjee et al. (2010)). These kinds of individually targeted efforts either mobilize voters to the polling booths, or persuade them to vote for a particular candidate. We first model this relationship (between politicians who give handouts and citizens) in terms of turnout and vote buying, in order to find out the optimal level of individual handouts. Then we aggregate the results across districts to investigate in which ones office-motivated politicians allocate greater spending. We show that the largest bang-for-the-buck occurs in opposition strongholds.

When democratic institutions preserve the secret ballot, and politicians cannot make binding promises (Keefer and Vlaicu (2008)), the transaction between parties and voters faces a “double credibility” problem that shapes the exchange of votes and resources. For instance, if a party aims to mobilize a group of voters, it is relatively easy to monitor their turnout decisions. However, each individual’s choice in the polling booth is private. We show that if voters perceive a positive probability of being monitored, the voters’ credibility issue is partially solved (Stokes (2005), Gerber et al. (2011), Gerber et al. (2009), Gerber et al. (2008)). Similarly, parties cannot credibly commit to fulfilling their promises after the election. We tackle this problem by letting the transactions occur before voting takes place, i.e. transfers are upfront payments.

The theoretical literature has focused either on vote buying or turnout buying strategies in different contexts. For instance, in the case of large elections and full information on the ideology of voters, Stokes (2005) finds that vote buying should be aimed at “weak opposers” and “indifferent” voters, while Nichter (2008) finds that turnout buying should be aimed at “weak supporters”. On the contrary, in Dekel et al. (2008) the optimal vote-buying strategy is independent of the voters’ preferred party, and Herrera et al. (2008) assume that the effectiveness of targeted mobilization is exogenous. Related to our multi-district approach, the only literature that looks at the optimal allocation of resources across districts is that on distributive politics. Its framework only accounts for persuasion strategies and provides mixed results. For instance, Cox and McCubbins (1986) finds

that parties focus on “core supporters”, while Lindbeck and Weibull (1987) predicts the opposite, that parties spend more resources on “swing” (or indifferent) voters.

However, when persuasion and mobilization strategies are considered simultaneously in a large election, and the ideology of voters is not known by the incumbent party, our multi-district approach delivers new results. First, if ideologies were public knowledge, parties would find that vote buying is the best strategy in every district, as it is more cost-effective. Second, since ideologies are private to the citizens, the incumbent party exploits the observable characteristics of districts to discriminate among them. And within each district it offers the same transfer to all citizens because they are ex-ante identical. Third, given the platforms, the incumbent party allocates more resources and pays larger individual transfers in “opposing districts” rather than in “swing” or “core districts”. This result is novel in the literature as it predicts that the incumbent focuses on those districts where the challenger is favored. Moreover, within our framework, Cox (2006)’s claim that large shares of resources are received by the party’s supporters is also contemplated, as they receive transfers even in opposing districts.. In particular, we find that if some opposers are persuaded by the incumbent, then it is necessarily the case that, in the same district, the weak supporters are mobilized and the core supporters receive transfers as well.

The rationale for these results follows from the politicians’ limited knowledge of citizens’ preferences. Intuitively, the incumbent party, as a vote share maximizer, does not want to “waste” money on voters that would vote for it even without the transfer. Hence, it moves away from relatively safe districts - i.e. with many core supporters - in order to free up resources. In other words, when politicians only know the distribution of ideologies in a given district rather than the individual preferences, then the “vote buying politician” does not know whether he is giving a handout to a citizen who would have voted for him anyway. Thus, he prefers to focus on districts where it is more likely that he would target undecided voters, which occurs more often in districts with fewer supporters.

We test the main theoretical prediction of our model, and we find evidence for our hypothesis in the case of the 2003 presidential elections in Argentina. In particular, we show that the implementation of a government-run discretionary social program that consisted of cash disbursements was skewed toward opposition districts in the month of the elections, and that indeed had the effect of a political campaign. Furthermore, we estimate the average cost of persuading voters, which ranged between 40 and 180 US dollars, depending on the econometric strategy.

Argentina’s 2003 presidential election is particularly appropriate as a case study, not only because of the availability of very disaggregated electoral data but also because of the 2001 economic and political crises, which can be exploited as a natural experiment. Following this strategy, we get a measure of the ideological leaning of each district by solving a two-way causality problem between spending and electoral results, pervasive in the literature. This endogeneity problem arises because campaigns can take place in two different but not exclusive ways: one involves spending during the

actual campaign (advertising, traveling, direct calls, mobilization strategies, vote buying, etc), and the other one implies spending after winning (i.e. fulfilling campaign promises). Candidates usually do both, therefore spending between elections might be a mix of fulfilling campaign promises and mobilization and persuasion strategies for the following electoral cycle.¹ The 2001 political turmoil in Argentina allows us to isolate the 2003 spending campaign from spending promises related to the previous 2001 electoral outcome.

We find that although the expenditures in the social program were mainly allocated to the targeted population, they were largely skewed toward opposition strongholds. Moreover, in the election, that spending had an impact favouring the incumbent’s candidate, consistently with the hypothesis that the allocation of resources was viewed as campaign spending. Furthermore, using a proxy for the “perceived probability of monitoring”, we also show that more monitoring induced greater spending, and a higher turnout and vote for the incumbent. Finally, using a quite conservative estimate of the cost of buying a vote - 96 US dollars - we calculate that around 750 thousand votes were bought, which accounts for 20% of the votes obtained by the candidate who finally became president.

Summing up, we first show theoretically that an office-motivated incumbent should allocate greater transfers to opposition strongholds when persuasion and mobilization are considered simultaneously in a direct single-member district election and voters’ preferences are private knowledge. Moreover, under this set-up, mobilization occurs mainly among weak supporters, and persuasion among undecided voters and weak opposers. Second, we bring our predictions to the data, and using Argentina’s turmoil as an exogenous shock we confirm that our hypothesis holds during the 2003 presidential elections, when we look at the discretionary allocation of a social programme (Plan Jefes y Jefas de Hogar), mainly seen as clientelist spending during the months previous to the election.

2 Related literature

The literature that studies this problem splits into two different branches. On one side, there are papers that explain the individual decision-making of voters and parties (Why would anybody sell a vote? For how much? Whose vote is cheaper to buy?). On the other, some papers study the aggregate problem of distributive politics, i.e. the optimal allocation of spending/campaigning resources to maximize the vote share (in our case, through mobilization and persuasion of voters) across districts or groups.

Regarding the former, Dekel et al. (2008) solve for a vote-buying equilibrium with upfront payments and campaign promises in a complete information model of multiple and sequential bidding for voters. Voters sell their “voting rights” to the highest bidder and the party that gains

¹The literature on Political Budget Cycles shows that spending during the year of the campaign increases in both developed and developing countries, see Brender and Drazen (2005) and references therein.

more perks from holding office wins. Stokes 2005 also studies vote buying, but this time as an infinite game where the party plays with trigger strategies: it pays a transfer until it finds that the voter has cheated. The ballot is cast secretly but there is an imperfect monitoring technology. The model predicts that parties target “weak opposers” and “indifferent” voters, discriminating against their own “strong supporters”, although Stokes’ empirical evidence suggest that parties are more likely to target their own supporters (in addition to uneducated and poor citizens). Nichter (2008) reproduces the same model but with turnout buying and perfect monitoring. He reaches opposite conclusions: weak supporters are easier to buy. In both papers the common knowledge of voters’ ideologies drives the results: indifferent and almost indifferent voters are cheaper to persuade (because you do not buy the votes of people already voting for you), and supporters are cheaper to mobilize.

Regarding the latter, the literature on campaigning and distributive politics studies the optimal allocation of campaign “efforts” across states. Some empirical studies focus on the actual campaign by looking at spending and/or visits to each state by the candidates. A different branch of this literature studies the promises made during the campaign, measured as the pork-barrel spending in each state, by the winner. This last approach assumes that the promises are credible, which, although questionable, may be a plausible assumption in developed countries. Nonetheless, it is unlikely to hold in the developing world.

Therefore, the problem is framed in terms of two competing hypotheses highlighted in the theoretical literature: whether more resources should go to “swing” groups that - if convinced by the promises or the spending - would change the outcome of the election (Dixit and Londregan (1995), Lindbeck and Weibull (1987)); or, on the contrary, whether the resources should be mainly allocated to “core” groups, most responsive to the promises (or transfers), and so cheaper to convince (Dixit and Londregan (1995), Cox and McCubbins (1986)).

Unfortunately, the evidence is ambiguous. Stromberg (2008) studies candidates visit to each state in the US to conclude that candidates (optimally) spend more time in decisive swing states (i.e. Florida and Pennsylvania in the 2004 election). On the other hand, Chen (2008) shows the opposite using the FEMA hurricane-relief spending during 2004: greater spending in more Republican districts is a vote-maximizing strategy for Republicans. Outside the US, Dahlberg and Johansson (2002) shows that parties maximize the probability of winning by allocating larger transfers to swing municipalities (before the elections); and Case (2001) shows a similar result for the case of Albania.

Stromberg (2008) assumes that the candidates’ campaigns have an effect *per se*, while the remaining papers in the previous paragraph look at spending **before** the election. In either case, those expenditures are “public goods”, in the sense that any extra dollar spent is enjoyed by all the voters in the district (i.e. advertisements). We also tackle credibility issues, which are present in both branches of the literature. When democratic institutions preserve the secret ballot, and

politicians cannot make binding promises (Keefer and Vlaicu (2008)), the transaction between parties and voters faces a “double credibility” problem that shapes the exchange of votes and resources. For instance, if a party aims to mobilize a group of voters, it is relatively easy to monitor their turnout decisions. However, each individual’s choice in the polling booth is private. Similarly, when a party spends resources on influencing a citizen’s vote, it is relatively difficult to commit the voter to choosing this particular party. We find that if voters perceive a positive probability of being monitored (Gerber et al. (2008)), the voters’ credibility issue is partially solved (Stokes (2005)). At the same time, parties cannot credibly commit to fulfilling their promises after the election. We solve this problem by letting the transactions occur before voting takes place, i.e. transfers are upfront payments. Also, we focus on spending as “private goods” targeted at individuals (i.e. calls rather than TV ads), in a direct majoritarian election.

Finally, the theoretical literature has a hard time reconciling the “swing district” hypothesis with another piece of evidence: loyalists (core constituents, or strong supporters) are the recipients of a larger share of the transfers (Cox (2006)). Although some of the above models can accommodate either result, the existent literature cannot explain both simultaneously. We suggest this follows from assuming that ideologies are observed (either by the incumbent or his brokers or party leaders).

In the following sections of the paper we introduce the model (section (3)), where we discuss the individual exchange of goods and services for votes, and then we show the results across districts. Then, we explain the use of the Argentine crisis as a natural experiment, and we test the predictions of the model (section (4)). Finally, we conclude.

3 The model

We first describe how the incumbent allocates his budget to persuade and/or mobilize voters in a representative district, and then we look at the optimal allocation of the public funds across districts.

In this economy, there are N^d eligible voters per district d , and two national political parties: the incumbent I , and the opposition O , with fixed platforms, X_I and X_O , in the policy space $X \subset \mathfrak{R}$. They compete for office in a single-member election, in which the party with more votes across all districts is the winner.² Both parties are purely office motivated, and the incumbent uses federal funds to engage in “clientelist” competition by offering transfers to individuals, in such a way that it maximizes I ’s vote share V_I . Here, we let only the incumbent engage in vote and turnout buying to capture the incumbency’s spending advantages; however, following Roberson (2006), we show in the appendix that this is without loss of generality.

Citizens derive utility from their policy payoff, from their voting behaviour, and from the transfers. We consider each of these in detail below. Every citizen i in district d has a privately

²This is a single member district - SMD - election which is held across many localities or groups that I call districts.

known ideology $x_i \in X$, drawn from the cdf $F^d(x)$ with bounded support on X , unimodal, and absolutely continuous.

Consider first the utility derived from policy (the outcome contingent utility). Since we focus on large elections with a continuum of voters, the probability that a single vote is pivotal is zero for all voters and, hence, independently of the citizen's action, he always gets an expected policy payoff, as it is commonly assumed in the literature (see for instance, Dekel et al. (2008)). For simplicity, we do not write this expected policy payoff.

We now consider the utility derived from expressive voting (i.e. the act-contingent utility).³ All citizens get a direct benefit b and bear a direct cost related to turning out to vote. The cost depends on the ideological distance to the party's platform, quadratically. Hence, i 's voting payoff is

$$\begin{aligned} & b - (X_P - x_i)^2 && \text{if } i \text{ votes for party } P \in \{I, O\} \\ & 0 && \text{if } i \text{ does not vote} \end{aligned}$$

Let us consider now the payoff from the transfers. Given an offer by the incumbent of t_i^d dollars, each citizen's marginal value of a dollar of that offer is θ_i . If a citizen i in district d does not accept the transfer offer t_i^d , he only gets the "expressive voting payoff", but if he accepts it, and votes for the incumbent, he gets an extra payoff of

$$\theta t_i^d.$$

Let q^d capture the perceived monitoring probability times the punishment. Then if he accepts the transfer and votes for the opposition, he gets

$$\theta t_i^d - q^d.$$

Therefore, the sum of both terms leaves the citizen with the following utility:

$$u_i^d = \begin{cases} 0 & \text{if } i \text{ does not vote} \\ b - (X_P - x_i)^2 & \text{if } i \text{ votes for party } P \in \{I, O\} \\ b - (X_I - x_i)^2 + \theta t_i^d & \text{if } i \text{ accepts the transfer and votes for I} \\ b - (X_O - x_i)^2 + \theta t_i^d - q^d & \text{if } i \text{ accepts the transfer and votes for O} \end{cases} \quad (1)$$

Districts are the artifact that allows the incumbent to target his resource allocation more efficiently in order to buy as many votes (and as much turnout) as possible. The incumbent does not need to group voters depending only on their geographical location, but on any other observable characteristic: unions, ethnic groups, religions, etc. This grouping needs to have two

³Notice that in this setup, expressive voting has a big role in explaining the turnout decision since, as Cox (1999) puts it, "...act-contingent utilities rather than outcome-contingent utilities, drive turnout probabilities at the microlevel...". See Degan and Merlo (2009) for references.

main properties: first, it should enable discrimination across groups, hence each group should be different to each other in some observable dimension; second, the distributions of preferences must be known by the incumbent.⁴

Summarizing, districts differ in the technology available to monitor and punish voting behaviour (q^d), and in the underlying ideological bias drawn from $F^d(x)$. As mentioned before, with a secret ballot (or imperfect monitoring) and two-sided lack of credibility (politicians and voters), it is not possible to sign a contingent contract between those political actors. Hence, the incumbent allocates its budget B before the elections to buy votes and turnout through transfers, exploiting the observable differences across districts: the party directly observes q^d , N^d , and $F^d(x)$ for each district, and θ is observable.

A representative district

Before formally defining the vote-buying and turnout-buying thresholds, and showing their dependence on the transfers, we discuss the timing of the game in a district. First, notice that all citizens in a given district must look ex-ante identical. Therefore, the incumbent must offer the same transfer to all citizens $t_i^d = t^d$, which depends on the budget B , the distribution of preferences in all districts $\{F^j\}_{j=1}^D$, and the monitoring technology in all districts $\{q^j\}_{j=1}^D$. Second, each voter maximizes his utility, represented in equation (1), by choosing whether to accept a transfer and his voting behavior. Finally, voting takes place.

We say that an individual's vote is bought if he votes for the incumbent when he accepts the transfer while otherwise he would have voted for the opposition. We use the terms vote buying or persuading interchangeably. Formally:

Definition 1 A voter with ideology x_i sells his vote if :

- with no transfer, he prefers the opposition:

$$u_i(O|no\ transfer) \geq u_i(I|no\ transfer),$$
- with a transfer t^d , he changes his mind:

$$u_i(I|t^d) \geq u_i(O|no\ transfer) \geq u_i(no\ turnout|no\ transfer),$$
 and
- he does not default:

$$u_i(I|t^d) \geq u_i(O|t^d).$$

Thus, vote buying occurs when a voter who would have turned out for the opposition party without the transfer, now accepts the transfer and votes for the incumbent.

⁴We could also add a third dimension, in which within each group some citizens are *non buyable*, i.e. they would not change their voting behavior as a result of transfers, or $\theta_i = 0$. As long as these two subgroups can be distinguished within each group, the results do not change.

On the other hand, we say that a voter’s turnout is bought when he turns out to vote while he would not have voted otherwise. Thus, we interchangeably say that he sold his turnout or he is mobilized if:

Definition 2 A voter with ideology x_i is mobilized if:

- with no transfer, he does not turn out:
 $u_i(\text{no turnout}|\text{no transfer}) \geq \max\{u_i(I|\text{no transfer}), u_i(O|\text{no transfer})\},$
- with a transfer t^d , he changes his mind:
 $\min\{u_i(I|t^d), u_i(O|t^d)\} \geq u_i(\text{no turnout}|\text{no transfer}),$ and
- he does not default:
 $\min\{u_i(I|t^d), u_i(O|t^d)\} \geq u_i(\text{no turnout}|t^d).$

Notice that the last point, no default, it is included only for completeness, since the probability of monitoring is 1, and we assume the punishment large enough. Therefore, there is never default to mobilization. Thus, turnout buying occurs when a voter who would not have turned out without a transfer, now turns out to vote for either candidate. Throughout the paper when the voter votes for I, the party who mobilized him, we call it **effective turnout buying**.⁵

According to equation (1), and the definitions above, we can identify citizens’ types according to whether they would turn out without a transfer, who they would vote for, and whether they are prone to mobilization or persuasion. Thus, in the figure below we observe the “loyalists” (those who would always turnout to vote for the incumbent) and at the opposite extreme the “opposers” (who would turn out for the opposition, in the absence of transfers), and between them the weak supporters (to the left of zero), and the weak opposers (to the right), who are the “mobilizable” ones.

Lemma 1 below states that when the evaluation of the transfer is larger than the cost of cheating, all voters who accept the transfer turn out to vote for the incumbent. The converse is also true, when the individual value attached to an accepted transfer (θt^d) is larger than the risk associated to voting for the opposition (q^d), the transfers and the monitoring technology do not suffice neither to persuade nor to mobilize some voters. Intuitively, even the voters that are very far from the incumbents’ platform would accept the transfers and vote for the opposition because the monetary benefits more than compensate the expected costs of “cheating”. Hence, for those voters, vote buying and mobilization are ineffective, in the sense that despite being bought or mobilized by the incumbent, they vote for the opposition.

⁵Notice that with our definitions a voter cannot be both mobilized and persuaded. Only voters who would not vote are the ones that can be mobilized with a transfer. Also, only citizens that vote for the opposition can be persuaded by the incumbent. For instance, take a citizen who accepted a transfer and voted for the incumbent. If without the transfer she prefers the opposition but does not vote, it may be a common intuition to think that she was both mobilized and persuaded. However, our definition implies that mobilization (as well as persuasion) is aimed at getting citizens to turn out for the incumbent, not only to vote. Under this framework, the example is a case of mobilization only.

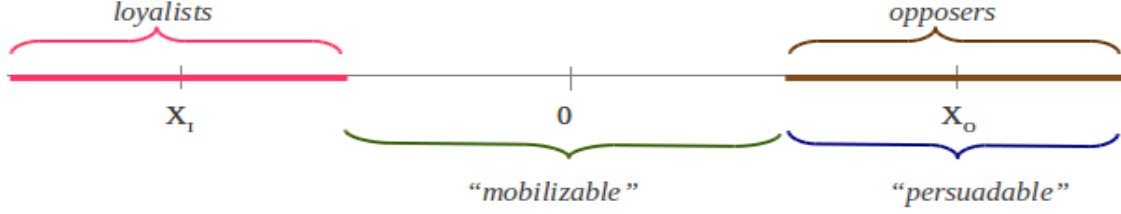


Figure 1: Definition of citizens' types in a given district

Lemma 1 *If $\theta t^d \leq q^d \forall d$, then $\Pr(i \text{ accepts } t^d) = \Pr(i \text{ votes for } I)$. That is, everybody who accepts the transfer votes for I.*

By focusing on this case we know the incumbent party does not transfer money to voters who will not vote for I. That means that there is no voter i with ideology x_i such that he will accept the transfer and will not vote for I in equilibrium. Thus, the incumbent optimally chooses transfers such that $\theta t^d \leq q^d$, and all vote and turnout buying is **effective**.

Let b , X_I , and the policy space $[\underline{x}, \bar{x}] \subset X$ be such that $\underline{x} \geq X_I - \sqrt{b}$; therefore, according to equation (1), in equilibrium there are no extremist voters who do not turnout, and mobilization can only occur among those voters located “between” the parties. This assumption simplifies the analysis without loss of generality.

According to the lemma and assumptions above, following definitions 1 and 2 we obtain a vote-buying threshold $n_{vb}(t^d)$, and a turnout-buying one $n_{tb}(t^d)$, respectively. These thresholds identify the ideology of a voter who is indifferent between voting for the incumbent or not, and turning out or not, respectively. As explained in the proposition below, if a voter's ideology is to the left of $n_{tb}(t^d)$ he turns out to vote; moreover, if he votes and his ideology is to the left of $n_{vb}(t^d)$ then he votes for I. In the following section, we identify these thresholds and we use Lemma 1 to identify the conditions for mobilization and persuasion by the incumbent in a given district.

Proposition 1 *For $\theta t^d \leq q^d$, there exists a turnout-buying threshold $n_{tb}(t^d)$, and a vote-buying threshold $n_{vb}(t^d)$, such that all voters i with*

$$x_i \in [\underline{x}, \min\{n_{vb}(t^d), n_{tb}(t^d)\}]$$

vote for the incumbent. Therefore,

- *if $n_{tb}(t^d) \leq n_{vb}(t^d)$ then all voters with $x_i \in [X_I + \sqrt{b}, n_{tb}(t^d)]$ are mobilized, and none is persuaded.*
- *if $n_{tb}(t^d) > n_{vb}(t^d)$ then all voters with $x_i \in [X_I + \sqrt{b}, X_O - \sqrt{b}]$ are mobilized, and all voters with $x_i \in [X_O - \sqrt{b}, n_{vb}(t^d)]$ are persuaded.*

Moreover,

$$n_{vb}(t^d) = \bar{X} + \frac{\theta t^d}{2\Delta_X} \quad , \text{ and} \quad n_{tb}(t^d) = X_I + \sqrt{b + \theta t^d}$$

Allocation across districts

From the previous section we know what it takes to mobilize or persuade a voter. Taking into account those results, the incumbent decides how to allocate the budget $B \equiv \sum_d B^d$ across districts that differ in the cost of buying votes and/or turnout to affect the electoral outcome. Given N^d , B^d , q^d and $F^d(x)$, for all d , the local leader chooses the level of private transfers t^d to be offered. For simplicity, let i^d denote citizen i in district d . Then, in each district d the incumbent distributes the money so that he maximizes the share of votes $V_I \equiv \sum_d V_I^d$:

$$\max V_I = \sum_d N^d \Pr(i^d \text{ votes for } I) \quad \text{s.to} \quad B \equiv \sum_d B^d \geq t^d N_\alpha^d \Pr(i^d \text{ accepts } t^d). \quad (2)$$

Let $n(t^d) \equiv \min\{n_{vb}(t^d), n_{tb}(t^d)\}$ for simplicity of notation. From Lemma 1 and Proposition 1 we know that it must be the case that $\theta t^d \leq q^d$, and so the probability that a voter accepts the transfer is the same as the probability of voting for the incumbent, $\Pr(i^d \text{ votes for } I) = \Pr(i^d \text{ accepts } t^d)$, and can be written as:

$$F^d(\min\{n_{vb}(t^d), n_{tb}(t^d)\}) - F^d(\underline{x}) = F^d(\min\{n_{vb}(t^d), n_{tb}(t^d)\}) \equiv F^d(n(t^d)). \quad (3)$$

Let $\Delta_x \equiv X_O - X_I > 0$. Then, following the same procedure as in Dixit and Londregan (1995):⁶, we obtain an implicit solution for t^d :

$$t^d = \frac{\sum_d t^d m^d + B}{\sum_d m^d} - \frac{2\Delta_x}{\theta} \frac{F^d(n(t^d))}{f^d(n(t^d))} \quad (4)$$

with $f^d(n(t^d)) \equiv \frac{\partial F^d(n(t^d))}{\partial t^d}$
and $m^d \equiv t^d N^d f^d$.

In equilibrium, $\sum t^d m^d$ and $\sum m^d$ are constants. Hence from (4) we see that the only thing that drives the differences between districts is the ideological distribution. Thus, looking in detail to the equation above, we find that the incumbent wishes to allocate greater transfers in those districts with lower $\frac{F^d}{f^d}$, which we could define as an “inverse success voting ratio”⁷. Put differently, if

⁶We replace equation (3) in the maximization problem (2), and take F.O.C. for a transfer in a district, say t^i . Then, we multiply the FOC on both sides by N^i , and we sum over i . We obtain an equation for the lagrangian multiplier, say λ , and we replace it in the original F.O.C. to obtain the optimal transfer.

⁷If the hazard ratio $\frac{f}{1-f}$ is a measure of the conditional probability of failure, then in our set-up rather than failure we measure success (F^d is the probability that a citizen votes for the incumbent, or rather the percentage of incumbent’s voters)

we think of the densities as positively-sloped demand functions, we can re-think our problem as one of a geographically discriminating monopoly. We can rewrite the above equation in terms of elasticities

$$t^d = \frac{MC^d}{1 + \frac{1}{\eta^d}},$$

where $\eta^d \equiv \frac{\partial F^d(n(t^d))}{\partial t^d} \frac{t^d}{F^d(n(t^d))}$, and I define the marginal cost, MC , as the change in total expenditures $t^d F^d(n(t^d))$ when an extra voter is bought. Thus, it is optimal to focus on the districts that are more “elastic” to transfers.

This general result can be explained in terms of the ideological leaning of each district by focusing on their mean ideology. Thus, if a district has a low mean (i.e. close to X_I), we call it a core one. On the other hand, if a district has a large mean (closer to X_O), we call it an opposition stronghold. We call the ones in which the mean is close to the average of the platforms $\frac{X_I + X_O}{2}$ swing districts. The following proposition establishes the conditions for focusing on opposition strongholds, highlighting the importance of breaking the until now dichotomic discussion between core and swing districts.

Proposition 2 *Let j and h be two districts with different cdf with bounded supports J and H , in $[\underline{x}, \bar{x}]$, such that $\mu_j < \mu_h$. If $\frac{F^j(n(t^j))}{f^j(n(t^j))} > \frac{F^h(n(t^h))}{f^h(n(t^h))}$, then (t^j, t^h) exists such that a greater transfer is allocated in the opposition stronghold:*

$$\mu_j < \mu_h \Rightarrow t^j < t^h.$$

In general, for any two districts $t^j - t^h = \frac{2\Delta_x}{\theta} [\frac{F^h(n(t^h))}{f^h(n(t^h))} - \frac{F^j(n(t^j))}{f^j(n(t^j))}]$ ⁸, but since we aim to explain our results in terms of the mean of each district, we can provide examples in which we fix the variance in the distribution. For instance, with the uniform distribution, largely used in the literature on voting (since Downs (1957)), our proposition delivers the following:⁹

$$F^d(n(t^d)) = \frac{n(t^d) - \underline{x}^d}{\bar{x}^d - \underline{x}^d} \quad \text{then} \quad t^j - t^h = k(\underline{x}^j - \underline{x}^h)$$

Intuitively, in order to mobilize more weak supporters, and/or persuade more weak opposers, larger transfers have to be disbursed. Nonetheless, since all voters are offered the same transfer,

⁸ $t^j - t^h$ can also be written in terms of elasticities:

$$t^j - t^h = \frac{\eta^j \eta^k + 1}{\eta^k \eta^j + 1}$$

⁹Or, for instance, the triangular one:

$$F^d(t) = \frac{(x - a^d)^2}{(b^d - c^d)(c^d - a^d)} \quad \text{then} \quad t^j - t^k = k''(a^j - a^k)$$

the marginal cost of increasing the transfer by a penny to mobilize an indifferent weak supporter is that penny times all the voters that accept the transfer (which includes all loyalists and possibly some weak supporters). By the same reasoning, increasing the transfer to persuade a weak opposer implies that all weak supporters and loyalists also get a larger transfer. Therefore, in order to minimize those “wasted resources” the incumbent gives more money in districts with fewer loyalists (i.e. opposition strongholds). On the other hand, the incumbent also faces an “upper bound” on the individual transfers since very large transfers would incentivize the strong opposers (and some weak) to accept it and shirk in the ballot, independently of the probability of being caught.

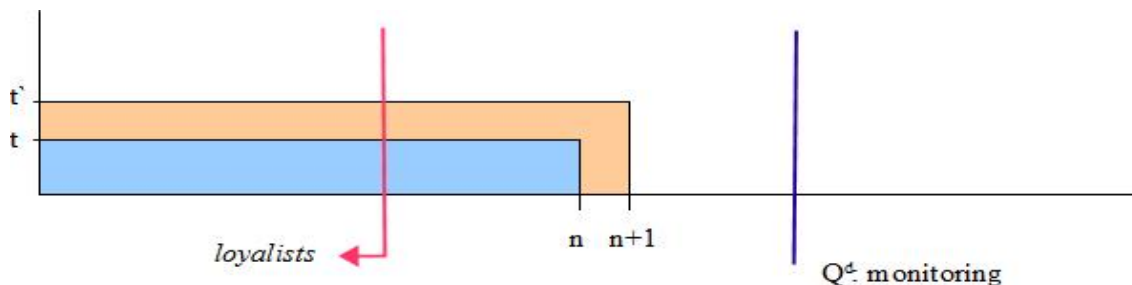


Figure 2: The marginal cost of buying an extra citizen

Incumbents do not waste money, therefore optimally they would never offer a transfer so big that it would mobilize but not persuade citizens. By the same reasoning, the incumbent does not want to waste money on loyalists that would have voted for him anyway: for any given level of transfer, **the marginal cost of getting one more vote is the total number of accepted transfers times the increment in the transfer**. Thus, districts with larger numbers of loyalists are associated with a higher marginal cost of a vote.

Remark 1 *Incumbents spend more money on persuasion and mobilization strategies in opposition strongholds, ceteris paribus.*

Also, it follows from lemma 1 above that in districts with high monitoring the citizens who accept a transfer are more likely to vote for the incumbent, which in turns increases the incentives to offer more transfers (Stokes (2005)).

Remark 2 *Higher perceived probability of monitoring results in higher spending and higher mobilization and persuasion.*

Finally, since we are considering the incumbent’s problem, we have purposefully omitted the presence of intermediaries throughout the set-up description. Political intermediaries, local party leaders, and party brokers are thought of as agents who are relatively better informed about

each citizen's preferences (see Stokes (2005), Finan et al. (2009), etc) in their local community. This assumption may allow the brokers to be more efficient and effective in exchanging goods and services for turnout and votes; nonetheless, we consider that the brokers' private information cannot be exploited by the incumbents.

4 The evidence

After the 2001 political and economic crises, the Argentinian government implemented a poverty relief programme - Plan Jefes y Jefas de Hogar - which gave the incumbent much discretion in the allocation of the spending from the programme to districts and finally individuals. Moreover, at full implementation, only around half of the potential recipients (i.e. the unemployed) were receiving funds from this programme. Although each "individual disbursement" (a transfer) was fixed around 35 US dollars, the government had discretion in how much to allocate to each district, according to the needs. These needs were formulated in a quite decentralized manner by municipalities and individuals jointly, as community development projects that the national government could finance. Since within these "projects" there could be different mixes of loyalists and opposers, the discretion came through the total amount allocated to the project. With the same reasoning as in the theoretical model, since ideologies were private knowledge, the incumbent could save money by allocating more money where it was sure that he would reach weak opposers; that is, in opposition strongholds.

In the remainder of this section we summarize Argentina's political events and economic background during the crises, the institutional details of the poverty alleviating programme (PJDH), and the electoral organization. Finally, we explain how these details allow us to use such crises as an exogenous shock to isolate pre-campaign spending.

4.1 Economic and political environment

Background information

The presidential election system in Argentina is, as described above, a single-member district with direct voting and runoff, held every 4 years in October. National legislative elections for both chambers (senators and deputies) are held every 2 years, when each chamber is partially renewed. During the period studied, there were two main national parties in Argentina: the ALIANZA, and the PERONIST parties.

In December 2001, an economic and political crisis exploded, prompting the resignation of president Fernando de la Rúa (from the ALIANZA party) 2 years before the end of his tenure. However, the country's political crisis deepened and three of his successors also resigned within a week (the president of the Senate, the congress-appointed provisional president Adolfo Rodríguez Saá, and the president of the House). In January 2002, the Congress appointed a new president

until December 2003, Eduardo Duhalde (from the PERONIST party), who nonetheless called for early elections a year after taking power. In April 2003 new national presidential elections took place, and the runner-up, the PERONIST Nestor Kirchner with 22% of the votes, became president in May 2003 after the winner of the elections stepped down from the second round. The full timeline of Argentine presidents is shown in figure (4) in the Appendix.

During his mandate, Duhalde instated a decentralized poverty alleviating programme aimed at the unemployed population¹⁰ (“Plan Jefes de Hogar”, from now on PJDH). By 2001 there were more than 4 million unemployed citizens (around a 18% rate of unemployment); when the programme began in May 2002, 53% of the population were below the poverty line, the unemployment rate was 21.5%, and as high as 25.5% in some of the major cities¹¹. Although this national plan involved the disbursement of only 150 pesos per recipient (around us\$ 40), it represented 7.5% of the total federal budget.

Since the economic situation called for immediate action, from the onset the programme implementation had broad support from all political factions. Criticisms only grew when the urgency was left behind, and irregularities regarding the management and allocation of the PJDH were reported. Numerous reports from NGOs, the World Bank, and even some independent government agencies signaled that the plans were not being allocated to the targeted population, that local leaders were keeping a “commission” for the disbursement of the plan, and other irregularities.¹²

The elections appeared on the horizon, and the use of the plan with political purposes (clientelism, or vote buying) arose as the main concern among the opposition; especially when the current incumbent (Duhalde) openly supported Nestor Kirchner as “his” candidate. The timing of the plan was, at least, curious since its implementation peaked during the month of the election, and declined immediately after it.

The poverty alleviating social program

The most salient characteristics of the PJDH were its highly decentralized management and implementation, and the flexible definition of the target population. In exchange for receiving money from the PJDH, all beneficiaries had to either work in a locally based project (community-oriented or private) or study. All the “local projects” were proposed by the local community through municipal councils (NGOs, religious associations, small firms, local government), and evaluated by the lowest level of government - the municipality. Once a project had been accepted, the municipality allocated the potential beneficiaries to the projects and the national government, through the Labor

¹⁰This programme was called “Head of Households’ Programme” (our translation) and it was popularly believed that it was aimed only at unemployed parents of children below 18 years old. Nevertheless, decree 565/2002 which regulates its application, indicates that every unemployed person would be a legal recipient of this “plan”.

¹¹25.5% in Cordoba and Catamarca, above 24% in Mar del Plata, Rosario, and Greater Buenos Aires.

¹²CIPPEC (2009) reports that 88% of the reports of clientelism regarding the social plans’ management were related to the PJDH. Galasso and Ravallion (2004) show that a third of the recipients were not among the target population, and that 80% of the target population did not receive a plan.

Ministry, paid directly to the municipality-approved list of beneficiaries. Although this feature of the PJDH left other subnational government organizations (i.e. provinces) relegated to supervision roles, it gave the national government room for discretion in deciding the amount disbursed to the project. Moreover, since at its peak, the programme could budget for at most 2 million beneficiaries, while the unemployed population was around 4 millions, the local governments enjoyed even more discretion in the allocation of the benefits.¹³

Electoral logistics

During the period studied, Argentina was divided in 24 districts: 23 provinces and Buenos Aires city. Each district elect its own governor (called mayor in Buenos Aires city) in a majoritarian election. Re-election was allowed for every office without restrictions except for the president, who was only allowed to be re-elected for one consecutive term.

Voting in national elections in Argentina was mandatory for all citizens between 18 and 70 that are not impeded by law (i.e. mentally ill, some prisoners, nationalized foreigners in non-national elections, etc). The obligation to vote was neither enforced nor penalized; thus, the turnout rate had varied between 60% and 80% since the return of democracy in 1983. The voting procedure consisted of each voter entering a room (“cuarto oscuro”) and taking a ballot paper, then secretly putting the ballot in an envelope secretly, and depositing his envelope in an urn publicly. This procedures took place in a **table**, located in a **circuit**, located in a **region** in a given province.

As explained above, each province is sub-divided into **regions** (called “Departamentos”), and each region is also subdivided in **circuits**, according to geographical and political divisions. While most regions coincide with urban conglomerates, the organization of the circuits take into account geographical divisions that would make voting more difficult (e.g. rivers).

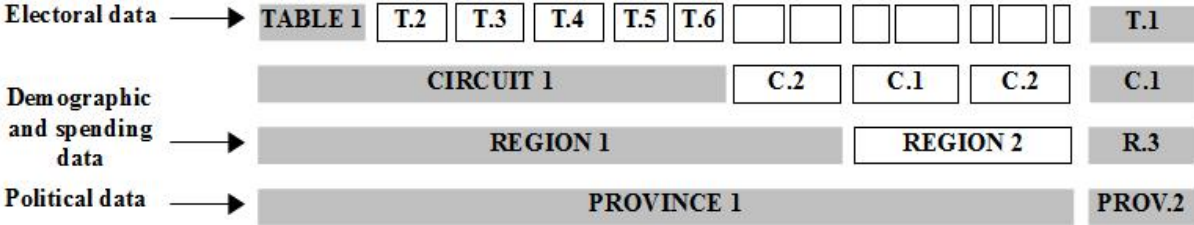


Figure 3: Location of electoral tables and available data

Argentina’s turmoil

In the literature on distributive politics, politicians make credible campaign promises and after winning, they allocate their budget according to their promises. Therefore, the vote count at time

¹³See the appendix for more institutional details of this programme.

T is endogenous to spending in time T+1. Within this framework, spending on PJDH in a given region in 2003 (T+1) could be thought of as a payoff for “good electoral performance” in 2001 (T) in that region. However, since by 2001 the incumbent party was different to the one managing the plan, there is no reason to think this. Moreover, by the time of the legislative election no opposition party (ie. PERONIST) could have forecast that it would be the incumbent before the 2003 elections, and so they could not have made this kind of electoral promise. Therefore, we will claim that spending on PLANS is caused by IDEOLOGY, and not the other way around.

Nonetheless, it could be argued that promises were made at subnational levels (by intermediaries, mayors, or local legislators), and although they were supposed to be paid in a different way, the PJDH was used instead. If so, that would generate a positive correlation between plans and ideology that goes against our predictions. Since we find a negative correlation, the possibility that PJDH was also used to pay back electoral promises from 2001 only makes our story even stronger.

4.2 Empirical strategy

Targeted spending

We show that the incumbent spends more money (allocates more plans) in those regions where the ideological distribution of voters is biased against him. Say that the variable IDEOLOGY is the ideological bias toward the peronist incumbent, PLANS is the number of plans allocated right before the election, April 2003, and X is a vector that contains relevant control variables that we explain below. Then, we prove that the coefficient β below is negative:

$$PLANS_{p,r} = \beta \cdot IDEOLOGY_{p,r,c} + \gamma_0 \cdot X_{p,r,c} + \epsilon_{p,r,c} \quad (5)$$

When studying the equation above, two main concerns arise: how to measure IDEOLOGY, and whether the model specification is appropriate. Regarding the latter, by design the PJDH has a target population (unemployed) that is considered in X. We explain the remaining variables in X below, but we also control for other demographic variables that may be relevant (poverty, education). More importantly, it has been pointed that the allocation of emergency employment programmes in Argentina may depend on institutional variables such as the number of representatives in Congress, partisan affiliations of provincial governors, and workers’ street protests (“piqueteros”)¹⁴. We control for this institutional variation across provinces by including provincial fixed effects.

Our proxy for IDEOLOGY requires an explanation. In order to obtain a measure of the 2003 ideological bias in each circuit, $IDEOLOGY_{p,r,c}$, we use the 2001 legislative elections as a proxy for a peronist ideological bias, measured as the deviation from the national average in any given circuit. Cox (1997) shows that proportional elections, and multipartism favor sincere voting. The 2001 elections in Argentina were legislative elections for deputies, who are elected in a proportional

¹⁴See Giraudy (2007) for a summary and results of this argument.

basis, therefore we could expect them to be positively correlated with the true distribution of ideologies.¹⁵

Why do we expect the 2001 electoral outcome to reflect the true preferences of the electorate? In particular, how do we know that the 2001 electorate was not subject to the same persuasion and mobilization strategies that we prove existed in 2003? We use Argentina’s political turmoil in two different ways to clarify the point. First, the crises provoked the appearance of bottom-up political organizations that naively aimed to replace the traditional parties. The protest chant was “QUE SE VAYAN TODOS”, that is, “THROW THEM...[THE POLITICIANS]...ALL OUT”, and the 2001 elections were characterized by a sentiment of apathy toward the traditional parties, and so their persuasion and mobilization strategies were weakened, and the number of effective parties rose from 2 to 5 (Levitsky and Murillo (2008)¹⁶, Calvo et al. (2002), Sanchez (2005), Ordeshook and Shvetsova (1994)). Second, in 2001 the party in power was ALIANZA, so if there was any use of discretionary funds to bias the election, it would have been against the PERONIST party. Thus, if anything, the true vote share of the PERONIST party is understated. However, since our measure of IDEOLOGY is calculated as a deviation from the national mean, we do not risk any such understatement.

Vote and turnout buying

Having shown that ideology biases spending, we proceed to estimate the consequences of spending. According to our theoretical predictions above, we expect the coefficients θ and μ to be positive:

$$VOTES_{p,r,c} = \theta.PLANSS_{p,r} + \gamma_1.X_{p,r,c} + \nu_{p,r,c}^V \quad (6)$$

$$TURNOUT_{p,r,c} = \mu.PLANSS_{p,r} + \gamma_2.X_{p,r,c} + \nu_{p,r,c}^T \quad (7)$$

In particular, we also control for ideology, and we find that a peronist bias has a positive effect on the dependent variables. That is, although higher spending is allocated to other districts, the more peronist district (measured with the 2001 elections) still vote more for the PERONIST party.

¹⁵In order to clarify, in Cox (1997) strategic voting places an upper bound on the number of parties present under any electoral system. When voters have to select M politicians (M being the “district magnitude”), then only M+1 parties would typically exist (as in Duverger (1963)). On the other hand, PR systems with large M favor strategic entry of parties: that is, it allows for the representation of all social cleavages in the form of parties (although it does not imply it necessarily). Regarding the present case, Argentina chose more than 200 deputies, proportionally, in 2001, in a context where the traditional political parties had been split into many new parties that represented different “social cleavages” (to use Cox’s words). Therefore, a large M with a large number of parties would result in less strategic voting. In other words, in all circumstances, a large M with PR and many parties favours the presence of more sincere voting.

¹⁶“The 2001-2002 crisis of governance and the economy triggered a massive withdrawal of public trust from the political elite. [...]the percentage of Argentines expressing confidence in their country’s political parties fell from 29 percent in 1997 to a stunningly abysmal 4 percent... This crisis of representation was seen in the 2001 midterm election when, in a striking protest against the entire political elite, 22 percent of voters cast blank or spoiled ballots. In two of the country’s largest districts, the city of Buenos Aires and the province of Santa Fe, the number of blank and spoiled ballots exceeded that for *all* parties combined.”

Moreover, the effect of plans on our dependent variables is also positive. Hence, although higher spending is allocated to less peronist districts, those districts with a higher allocation of plans vote more for the PERONIST party, although they were previously less peronist (positive and significant θ and μ).

4.2.1 Data sources, and descriptions of variables

We use four different data sets. All demographic variables are obtained from the 2001 Argentine Census (November 2001), and complemented with information from the INDEC (Argentine’s National Institute of Statistics) when specified. The smallest unit of analysis in these data is regional. The spending on “Planes Jefes y Jefas de Hogar” at the regional level was provided by the “Ministerio de Trabajo” (Argentine’s Department of Labor). The incumbency information is publicly available from many different sources. Last, the electoral data was collected in the “Ministerio del Interior” (Argentine’s Internal Affairs Ministry, similar to the Executive Office of the President in the US). When possible, we use the electoral outcomes at the table level; however when we need to make intertemporal comparisons (as in equation (5)), it is necessary to aggregate the data at the circuit level. Moreover, since the political and electoral divisions of the City of Buenos Aires (politically equivalent to a province) do not coincide, the only possible aggregation is to the province level. Thus we have no variation within it, and drop it from our data set¹⁷. In the appendix, we provide summary statistics of all variables of interest, and further explanations.

Here we explain the set of all possible variables contained in X , which vary across the estimated equation. We use three types of controls: (1) number of “legal” potential recipients of the plan, (2) general demographic variables such as education and poverty, and (3) institutional variables such as incumbency, fixed effects by province, and size of tables. All demographic controls in (1) and (2) are at the region level, while the ones in group (3) vary depending on the variable. We explain them all below.

Dependent variables. In equation (5) we intend to explain the allocation of plans, measured by $PLANS_{p,r}$. Under different specifications, we look at the effect of PLANS on votes for the incumbent’s PERONIST candidate, at the table level - $VotesTABLE_{p,r,c,t}$ - and the circuit level - $VotesCIRCUIT_{p,r,c}$. Also, we look at their effect on turnout: $VotersTABLE_{p,r,c,t}$, and $VotersCIRCUIT_{p,r,c}$. Alternatively, we also use the log of the total number of votes and turnout by circuit ($logVOTES_{p,r,c}$ and $logTURNOUT_{p,r,c}$, respectively), and the logarithm of PLANS.

Potential plan recipients. As mentioned above, the poverty relieving plan is targeted at unemployed citizens. Therefore, in equations (6) and (7) we control for the total number of unem-

¹⁷Another complication is that we use fixed effects, which would capture all the City of Buenos Aires’ demographic, electoral and PJDH spending data variation.

ployed people using three variables: unemployment in urban areas (with 2000 or more inhabitants), $URBANunemp_{p,r}$; rural unemployment grouped in settlements of 2000 or less, and rural unemployment dispersed, $RURALunemp1_{p,r}$ and $RURALunemp2_{p,r}$, respectively. We control for these different types of unemployment not only because there may be structural differences in the causes of unemployment, but also there may be differences in terms of access to social benefits, political support, party leaders, and so on. Alternatively, we also use the logarithms of these variables as controls, and we show that the results do not change under alternative definitions of the recipient population.

Demographics. It has been pointed out that not only the PERONIST vote is larger among less educated poor people (see Calvo and Murillo (2004), Stokes (2005)), but also the lower income groups are more prone to vote and turnout buying (see Stokes (2005), Nichter (2008)). Therefore we control for the level of education using the variable $loweducation_{p,r}$ for the percentage of individuals under 18 without a high school degree. Alternatively, we also use the log of the total number of individuals without that degree: $logNOHIGH SCHOOL_{p,r}$. Also, we control for structural poverty measures using an index of the quality of households called “calmat”; which we explain below. Moreover, we also control for the number of people with private health insurance in logs $logHEALTH_{p,r}$, as a percentage $healthinsurance_{p,r}$, and just the total number of people with such insurance $tiene_{p,r}$.

Monitoring and Electoral variables. Although it is not possible to observe the perceived probability of monitoring or the “psychological secrecy” (Gerber et al. various years)¹⁸, we use a variable which is likely to be correlated with it. In each table there are at most 450 voters; depending on the geography of the region and the circuit, and some randomness (ie. if the number of potential voters is not a multiple of 450), there are many tables with fewer voters. The number of eligible voters per table is known by the authorities in advance (by law, the first list of the allocation of voters to tables is circulated 6 months in advance), and can be easily gauged by the voters (who know exactly in which table they will vote 3 months in advance).

We use the number of electors (eligible voters) per table as a proxy for monitoring: when more citizens can vote on a table, it is harder for anybody to know/guess how a given voter have cast his ballot. On the contrary, with only a few voters per table, it is easier to deduce the vote of a given citizen.

Thus, the size of a table is the total number of electors who could cast their ballot in table t , in circuit c , region r and province p : see figure (??) for some summary statistics on $ELIGIBLEvoters_{p,r,c,t}$. However, since the table organization is not constant between the 2001 and 2003 elections, in (5) we calculate the average number of eligible voters per table in a cir-

¹⁸citetGerber2006, or ?

cuit $avgELIGvoters_{p,r,c}$. Besides, we introduce the total number of eligible voters by circuit $ELIGbycircuit_{p,r,c}$, the total number of tables by circuit $TABLESbycircuit_{p,r,c}$, and their logs.¹⁹

Also, when we add fixed effects per province we can estimate neither the effect of having incumbent governors from the PERONIST party INC_p , nor the effect of holding simultaneous elections SIM_p . However, we run alternative regressions that allow us to account for these effects. Finally, we also include the variable GENDER, which takes value 1 in men’s tables, and 0 in women’s tables.

4.3 Results

In the tables we show and discuss the results from our estimation with provincial fixed effects, and with robust standard errors clustered at the region level. Below, we discuss those results, and their robustness to different specifications.

Targeted spending

There are many interesting points to highlight in the results of tables (1) and (2). First, our results confirm the hypothesis robustly across all specifications: when $IDEOLOGY_{p,r,c}$ in a circuit favors the incumbent, its region receives fewer plans on average. Although we argue that the PJDH was utilized for political purposes, it is noticeable that plans were allocated where the target population lived: in all models, one more urban unemployed person in a region implies the allocation of around 0.4 more plans. However, as we introduce the explanatory variables into our model, we enrich the explanation of the spending.

The effect of IDEOLOGY varies in intensity across different specifications, but it remains negative and significant among all of them. For instance, in the basic model in column 2, without controls, if a circuit is 1% more in favor of the PERONIST party than the average circuit, then the region receives around 30 fewer plans. In the full models, that number increases to 90, meaning that 1% over the mean of PERONIST voters in a circuit implies 90 fewer plans on average.

Although the number of unemployed people, and the fixed effects explain around 95% of the variability in our dataset, we are still able to show that IDEOLOGY plays the role we predicted. That is, spending is not only biased by political motives, but it is skewed toward the regions that oppose the current incumbent.

As mentioned, the influence of IDEOLOGY increases as we control for the interaction and institutional terms. The interaction terms captures the effect of being a core (or opposition) stronghold combined with other relevant factors, such as incumbency (“ideologyXinc”), simultaneous elections (“ideologyXsim”), average number of potential voters per table (“ideologyXaveragesize”), and size

¹⁹There was a reshuffling of tables between elections since the maximum number of voters allowed per table increased from 350 in 2001 to 450 in 2003.

of rural unemployment (“ideologyXrural”). None of these interaction terms are significant, except for “ideologyXinc”, which is large and positive but smaller than the coefficient on ideology.

In other words, the effect of circuit-level ideological bias is amplified in NON PERONIST provinces: the national incumbent’s allocation of plans is more responsive to ideology than in PERONIST provinces. Similarly, discrimination between opposition and core strongholds in the peronist provinces is milder: a 1% bias against the peronist party leads to 15 more plans, while a bias toward it leads to 15 fewer plans (vs ± 95 in non-peronist provinces).

These asymmetries are caused by party competition: in peronist provinces the incumbent governor might be already campaigning for the national incumbent, either through vote-buying spending or through other means, which may imply that there are enough resources to ensure the election, and therefore there is no need to carefully discriminate between regions. On the other hand, the same effect in non peronist provinces might have the opposite result: the incumbent governor campaigns against the national incumbent, and therefore the competition makes the national incumbent use his resources more efficiently.

There are two other institutional variables which play an effect consistent with our predictions, although not simultaneously. As the average number of eligible votes per table increases, the number of plans is reduced; that is, as it becomes harder to monitor the voters’ behavior, the allocation of plans decreases. Also, the number of tables per circuit is a proxy of perceived monitoring: i.e. there may only be a few tables in a circuit if there are geographical circumstances that isolate part of the population, and then the electoral authorities “create” new circuits only for this more “isolated” population, which therefore is easier to identify. Moreover, few tables per circuit could also be the outcome of very small populations, in which case the effect is the same. According to our model, higher monitoring (fewer tables) should lead to more plans. The results confirm this by showing that one fewer table per circuit implies around 20 more plans.

Under all specifications, the log of the quality of the construction materials used to build the houses “logPOORHOUSE” is always positive and large. This variable is constructed by adding up all the households whose houses are poorly constructed. The censuses in Argentina record construction materials in the following sense: if the house has secure floors, roofs and walls built with proper isolating materials (i.e. cement) and finishing, the house is quality I. If safe but without proper isolating materials or finishing, it is quality II. If safe, but all the floors, roofs and walls are not built with properly isolating materials or finishing, it is quality III. Qualities IV and V are for houses with unsafe floors, roofs, and/or walls, like tents, or very provisional constructions (typically cardboard). We construct the index POORHOUSE by counting all the households with quality III, IV or V in each region. Its effect is very large: 1% percent more low quality houses increases the allocation of plans by a thousand. This result is consistent with the anecdotal evidence in Argentina that claims that the clientelist structures go deeper in “villas miserias” (shanty towns

Table 1: Allocation of PLANS

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
IDEOLOGY		-28.41*	-20.91*	-21.86*	-21.71*	-34.65***	-27.16**
		(-1.80)	(-1.73)	(-1.83)	(-1.80)	(-3.31)	(-2.05)
avgELIGvoters				-0.254	-0.277	-0.227	0.0259
				(-0.41)	(-0.44)	(-0.42)	(0.04)
TABLESbyCIRCUIT				-19.95***	-18.89***	-18.54***	-29.91***
				(-2.81)	(-2.72)	(-3.01)	(-4.28)
URBANunemp	0.426***	0.425***	0.404***	0.406***	0.389***		
	(35.05)	(36.75)	(24.49)	(25.24)	(6.07)		
RURALunemp1	0.0651	0.0854	-0.259	-0.261	-0.181		
	(0.07)	(0.09)	(-0.27)	(-0.28)	(-0.21)		
RURALunemp2	0.757**	0.764**	0.512	0.416	0.376		
	(2.05)	(2.06)	(1.35)	(1.07)	(0.94)		
logNOHIGHSCHOOL			-39.93	-110.7	-233.7	749.3	1181.7
			(-0.07)	(-0.19)	(-0.42)	(1.28)	(1.62)
logPOORHOUSE			895.3*	1113.8**	1194.0**	-631.3	-115.3
			(1.65)	(2.05)	(2.06)	(-0.95)	(-0.15)
population					0.00248		
					(0.28)		
target1wonbi						0.680***	
						(4.66)	
target1nbi						1.315***	
						(3.11)	
target2wonbi							1.209***
							(4.88)
target2nbi							1.941*
							(1.80)
_cons	586.8*	812.4**	-5400.4	-6076.9	-5498.2	-2402.7	-10136.1**
	(1.80)	(2.14)	(-1.35)	(-1.50)	(-1.46)	(-0.62)	(-2.29)
<i>N</i>	4846	4846	4846	4846	4846	4846	4846
<i>R</i> ²	0.952	0.952	0.954	0.954	0.954	0.960	0.946
adj. <i>R</i> ²	0.951	0.952	0.953	0.954	0.954	0.960	0.946

t statistics in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

on illegal plots that are initially “built” with cardboard, and similarly unstable materials)²⁰.

Last, we control for the log of the number of INITIAL PLANS, meaning those distributed in May 2002. When the programme was introduced, the urgency to palliate poverty and unemployment was immediate. Therefore it could be the case that the initial plans were allocated to the target population while, after the emergency, they were used purely with clientelist motives. The positive coefficient means that there is persistence of the motives (either urgency or clientelism), although it is worth pointing out that the introduction of this control makes all the other effects weaker.

Summing up, we show evidence that the allocation of plans was neither entirely driven by social/economic reasons, nor entirely driven by political ones. However, we show that the clientelist motivation (persuasion and/or mobilization) is consistent with our predictions. Moreover, the role played by the monitoring variables also supports the evidence that the plan allocation was skewed for political reasons, different to the ones previously stated in the literature.

Alternative specifications: in tables (5) and (6) in the Appendix, we show different specifications that also confirm our main predictions. In all cases, the coefficient on IDEOLOGY is negative, and significant. The main concerns regarding the model specification are regarding the demographics of the target population, and the possibility that the results are driven by scale effects.

We also introduce two alternative definitions of the target population, and in the last two columns of table (1) we show that our results do not change qualitatively when we use these variables instead of unemployment. First, we define it as households whose head is unemployed, $target1_{p,r}$; also, we look at the population under 18 years old in which according to the 2001 census either parent is unemployed, $target2_{p,r}$. Most of the research on the PJDH has focused on the impact of this programme on poverty levels in Argentina (Cruces and Gasparini (2008), Gasparini et al. (2009), Cruces et al. (2011)), and has defined the target population as we do with the variable “target1”. However, since the PJDH was framed as a poverty alleviating program, it is common to see the target population as those in extreme poverty within those households that qualify for the programme. The measure used is “unsatisfied basic needs”: I call the households who are target population with and without unsatisfied basic needs $target1woNBI_{p,r}$, $target1NBI_{p,r}$, $target2woNBI_{p,r}$, and $target2NBI_{p,r}$ (NBI for their acronym in spanish).

The only change we observe is that our main variable of interest stays negative, its level of significance increases, and it becomes even more negative; that is, it is more in line with our tested hypothesis. However, we choose to show the results with the most lax definition for our target population for a few reasons: first, we consider that it is more in line with the decree that regulates the program management. Second, it is the one that has a larger universe of recipients, therefore is more consistent with our theoretical modeling.

²⁰For such evidence, see Auyero (2000), and Zarazaga (2010). Surprisingly, in our view there is no paper that has looked at this variable to test the anecdotal evidence.

Table 2: Allocation of PLAN with INTERACTION terms (full table)

	(1)	(2)	(3)	(4)
IDEOLOGY	-93.24** (-2.49)	-83.93** (-2.21)	-84.87** (-2.21)	-84.78** (-2.23)
avgELIGvoters	-0.374 (-0.55)		-0.304 (-0.45)	-0.348 (-0.52)
TABLESbyCIRCUIT	-19.33*** (-2.77)		-19.56*** (-2.86)	-18.33*** (-2.72)
URBANunemp	0.409*** (24.14)	0.406*** (24.31)	0.408*** (25.02)	0.389*** (6.08)
RURALunemp1	-0.270 (-0.29)	-0.154 (-0.17)	-0.154 (-0.17)	-0.0611 (-0.07)
RURALunemp2	0.349 (0.92)	0.345 (0.97)	0.255 (0.71)	0.208 (0.57)
logNOHIGHSCHOOL	-214.1 (-0.37)	-480.1 (-0.78)	-543.8 (-0.89)	-687.6 (-1.15)
logPOORHOUSE	1109.2** (2.05)	908.0* (1.71)	1118.7** (2.11)	1210.4** (2.16)
ideologyXsim	-2.584 (-0.07)	-1.015 (-0.03)	-1.254 (-0.03)	-2.168 (-0.06)
ideologyXinc	80.13* (1.91)	71.96* (1.67)	71.84* (1.69)	71.46* (1.70)
ideologyXaveragesize	0.00244 (0.06)	-0.00415 (-0.11)	0.00426 (0.11)	0.00709 (0.19)
ideologyXrural	0.0148 (1.32)	0.0134 (1.16)	0.0122 (1.05)	0.0122 (1.05)
logINITIALPLANS		355.8** (2.56)	358.2** (2.58)	361.8*** (2.62)
population				0.00284 (0.32)
_cons	-4784.5 (-1.19)	-2739.2 (-0.67)	-3443.9 (-0.84)	-2764.9 (-0.71)
<i>N</i>	4846	4846	4846	4846
<i>R</i> ²	0.955	0.955	0.956	0.956
adj. <i>R</i> ²	0.955	0.955	0.956	0.956

t statistics in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Vote and turnout buying

In this section we investigate the effect of a higher allocation of PJDH plans on the total number of votes received by the incumbent’s candidate (the variable $Votes_{p,r,c,t}$), and the total turnout ($Voters_{p,r,c,t}$). It is noticeable that under all the different model specifications in tables (3), (4), and the appendix the coefficient on PLANS is always positive and significant. Moreover, although the allocation of plans is partly explained by our measure of ideology, the effect of $IDEOLOGY_{p,r,c}$ on the total votes obtained by Kirchner is positive and significant on those tables too.

Nonetheless, this time, we are not directly testing our model since we cannot observe the effect of each transfer “individually”. Instead, we show that these transfers had an effect on votes and turnout that is consistent with our predictions. And finally, we show different specifications that would indicate that our story is correct.²¹

Table 3: Votes and voters, at the TABLE level - Persuasion and mobilization

	(1)	(2)	(3)	(4)	(5)	(6)
	Votes	Voters	Votes	Voters	Votes	Voters
logPLANS	4.853*** (5.76)	14.95*** (17.48)	1.528* (1.89)	1.153*** (2.88)	2.021** (2.40)	3.034*** (6.83)
IDEOLOGY	0.774*** (7.42)	-0.521*** (-4.44)	0.879*** (9.73)	0.148** (2.29)	0.850*** (8.77)	-0.0855 (-1.08)
ELIGIBLEvoters			-0.0447*** (-3.24)	0.788*** (261.93)		
VotersTABLE			0.275*** (14.40)			
logELIG_T					-16.24*** (-4.72)	147.7*** (61.63)
logVoters_T					46.38*** (13.15)	
_cons	18.74*** (2.72)	165.5*** (22.38)	-16.64** (-2.45)	-12.50*** (-4.04)	-121.7*** (-15.66)	-597.7*** (-44.29)
N	58851	58851	58851	58851	58851	58851
R^2	0.524	0.154	0.696	0.915	0.672	0.818
adj. R^2	0.523	0.154	0.696	0.915	0.672	0.818

t statistics in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

In order to be more detailed regarding our strategy, we look first at the most disaggregated

²¹Notice that testing the “individual” vote and turnout buying is impossible to prove conclusively with real data without engaging in illegal electoral activities.

Table 4: VotesTABLE with DEMOGRAPHIC controls

	(1)	(2)	(3)	(4)	(5)	(6)
logPLANS	3.803** (2.58)	3.668** (2.49)	2.931*** (3.58)	2.613*** (3.09)	3.780*** (3.45)	4.145*** (4.90)
IDEOLOGY	0.795*** (8.05)	0.745*** (8.25)	0.735*** (8.32)	0.731*** (8.29)	0.694*** (8.59)	0.648*** (8.05)
logELIG_T	-16.38*** (-4.76)	-17.54*** (-4.96)	-15.53*** (-4.47)	-16.08*** (-4.60)	-13.17*** (-4.77)	-13.47*** (-5.03)
logVoters_T	46.78*** (13.31)	47.89*** (13.30)	45.84*** (12.93)	46.31*** (13.06)	43.40*** (15.13)	43.54*** (15.46)
DEMOGRAPHICS						
N	58851	58851	58851	58851	58851	58851
R^2	0.673	0.674	0.677	0.677	0.687	0.698
adj. R^2	0.673	0.674	0.677	0.677	0.687	0.698

t statistics in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

voting data by table, so we can control for some “table characteristics” that may influence the outcome. As mentioned above, one of those characteristics is $ELIGIBLEvoters_{p,r,c,t}$, which is related to the perceived monitoring probability. The other one is $GENDER_{p,r,c,t}$; in Argentina, men and women vote in different tables, which may be relevant since it has been pointed out that women may have central importance in clientelist networks²². After looking at the table results, we aggregate the voting data, and we look at the circuit-level results (to have a better idea of the aggregated effect of plans). In that case, we control for the total number of eligible voters - $ELIGvoters_{scir}$ -, the average - $avgELIGvoters_{p,r,c}$ -, and the number of tables by circuit - $TABLES_{bycircuit}_{p,r,c}$.

In table (3), we show the simplest possible regressions on which both votes (odd columns) and voters by table (even columns) are positively influenced by $logPLANS_{p,r,c}$. Although our model has variable success in explaining votes and turnout, we can say that, generally, the effect of plans is larger on turnout than on vote buying. For instance, in column (1), a 1% increase in the plans allocated to a region increases around 5 votes per table in that region; while it increases the turnout by 15 voters per table. Also, columns (3) and (5) show that the monitoring variable has the expected sign as well: for instance, one more eligible voter per table (less monitoring) decreases the vote count. On the other hand, higher turnout increases it: one more voter per table adds 0.27 Kirchner votes, which is very similar to his national share of 24% (column 3).

²²See, for instance, Auyero (2000), Galasso and Ravallion (2004), Gasparini (2005).

In this very simple setup, as well as when we control for demographics in various different ways, the effect of ideology is always around 0.75 extra voters with a 1% increase above the general peronist mean. The condensed results are shown in table (4), while the full table is in the appendix (table (??)). Moreover, the effects of the log of PLANS, the number of eligible voters, and the total voters are also very consistent, and in all cases they have the right sign and significance. More concisely, a 1% increase in plans increases the peronist vote count by between 3 and 4 votes per table; and 1% bigger tables decrease that count by around 16 votes.

Furthermore, as with the allocation of plans, the overall effect of ideology depends on some institutional features, such as whether the incumbent governor is peronist and whether there are provincial elections being held simultaneously. In table (??) we show that although incumbency increases the total peronist vote by table, holding simultaneous elections decreases it by more or less the same number. Thus, in a region in a province with simultaneous elections and a peronist incumbent the overall effect of ideology is smaller but still positive. As was pointed out when we were investigating the effect of ideology on the allocation of plans, it is true that the effect on votes is larger in peronist circuits in peronist provinces (around 0.85 extra votes per table per each extra percentage of ideological bias). However, when there are simultaneous elections in a peronist province, maybe the effect of a tougher electoral competition reduces the impact of ideology on votes to 0.3 extra votes per table.

Similar results hold true regarding turnout in tables (??) and (??) in the appendix. The effect of plans on turnout is always positive and significant, and most of the time larger than the effect on votes. This may be a result of the need for a different model to explain turnout, or may simply mean that plans are a better tool for mobilizing rather than persuading voters.

Some other empirical regularities hold across all models. The most noticeable is that gender matters greatly. In male tables the turnout is on average 10 citizens fewer than in female tables. Although these results are conditional on demographics, they are not conditional on female demographics with respect to male. Hence, two concerns may arise. First, we could think that since there are more women, more should turn out. However, not only do we control for the eligible voters per table but also, more women (if anything) should have the opposite effect. That is, since they have higher life expectancy, then across the elderly population (where voting is not mandatory), the turnout should be smaller. Nonetheless, the opposite is true: women vote more than men, consistently. Second, women are on average less educated and less wealthy, all characteristics that would account for lower turnout (see ?), nonetheless, we find the opposite. Far from puzzling, this could be due to the role women play in distributing food and medicine within the clientelist networks (Auyero (2000)), or the effect of the PJDH directly, since women were largely overrepresented in the recipient population (Galasso and Ravallion (2004), and Gasparini (2005)), as mentioned above.

Regarding ideology, although a circuit ideologically leaning toward the peronist party increases

the peronist vote, it decreases turnout. The effect is negative and small or non-significant in all the specifications. However, the interaction term of ideology with incumbency is positive and significant. This implies that in circuits favorable to the peronist incumbent, the turnout increases. Also, consistent with the historical and anecdotal evidence that links the PERONIST party to lower income voters, poverty - measured using the number of poorly constructed houses - increases the votes and turnout at the district level in a significant way. ²³

4.3.1 The cost of a vote: summary of results.

We build a quick example that summarizes the results and shows the incidence of the ideological preferences of voters on the allocation of spending, and the effect of the plans on the total peronist vote count. With this goal, we show the results, aggregating votes by circuits. Although we lose some information and precision by doing so, we can make the interpretation of the coefficients in a more transparent way. To do this, we always look at the most conservative estimate: ie. the smallest coefficients in table(??); and at the average allocation of plans to the median region. An increase in 1% in the allocation of plans to a region accounts for around 140 extra votes in each circuit. The median is 7 circuits per region; therefore, that would be around 980 extra votes per region. The average number of plans per region is around 3900, therefore, a conservative estimate would indicate that a vote costs around \$40. Similarly, the cost of an extra voter is around \$15. If instead, we rely on the estimates by table, 3900 plans in a region imply 2.6 votes per table. In the median circuit there are 11 tables. That is a cost of around \$180 per vote. A less conservative estimate (column 6 in table (4)) would leave it at \$116. If instead we look at the median allocation of plans - 1200 - then the median effect on a median region is between \$42 and \$71 per vote.

Using the cheapest and most expensive estimates of the price of a vote, we now calculate the total number of votes that the government could have bought at the peak of the plan: 1.9 million recipients at \$35 per plan involves 66 million dollars. In turn, that implies between 0.4 and 1.6 million voters, in an election with 17 million voters. Kirchner finally became president with less than 4 million votes, which implies that between 10% and 40% of his votes could have been obtained through the PJDH. Without these votes, he might have ended up in 3rd place, without access to the runoff stage. Naturally, these calculations do not take into account any welfare considerations, and only provide a back-of-an-envelope estimate, which varies greatly (between 40 and 180 dollars per vote).

²³**Alternative specifications are possible.** Although in the allocation of plans, simultaneous elections did not matter, they do in the total peronist votes. Therefore, electoral competition - dismissed everywhere else - matters. How does this affect our estimations? In our model, we only have information on the spending by the national peronist incumbent by region on a poverty-relieving plan that has been used in a clientelist way, or rather as campaigning. It is reasonable to assume that the opposition parties, knowing this situation, also exert some effort in those (and other) regions, but we do not observe that “effort”. Therefore, if we re-interpret the coefficient of plans as the differential spending per region between the national peronist party and the national opposition, we might be underestimating the effect of PLANS. Full tables for alternative specifications for turnout and votes, at the table and circuit levels can be found in the appendix.

5 Conclusion

Our contribution enriches the literature on distributive politics by showing that the dichotomic discussion between swing and core districts should acknowledge the possibility of a third hypothesis: in a single-member election, like a presidential campaign with direct voting, opposition strongholds are the optimal target for an incumbent who intends to persuade and or mobilize citizens.

We do so by building a theoretical model that departs from the existing literature by assuming that individuals' preferences are unobserved (as opposed to Stokes (2005)), that the incumbent spends money on individual transfers rather than on campaign promises or advertisements, that function like local public goods (as in Stromberg (2008), Dixit and Londregan (1995), etc). We test our predictions with data from the presidential elections in Argentina during 2003. Besides, we exploit the 2001 political and economic crises as an exogenous shock that allows us to estimate the ideological leaning of each circuit, and to separate persuasion and mobilization strategies from campaign promises.

Theoretically, our contributions to the individual persuasion and mobilization literature are that, first, we deal with the double credibility problem and we allow for the coexistence of persuasion and mobilization strategies. Thus, while the perception of monitoring and the upfront payments solve the commitment problem, the parties engage in clientelist strategies depending on their limited knowledge of the distribution of preferences. Second, since we do not believe that parties know the ideology of each voter, they have to pay a price for the votes (or turnout) that only depends on observable differences. This takes us to the optimal allocation problem. Our contribution to the distributive politics literature is delivered by aggregating our results, and exploiting the observable differences across districts or groups. We show that the allocation of upfront payments goes to opposing districts rather than to ex-ante core (Cox and McCubbins (1986)) or swing districts (Dixit and Londregan (1995), and Lindbeck and Weibull (1987)). However, consistently with Cox 2006, within an opposing district the equilibrium transfer is allocated in the following order: first, strong supporters that would vote for the incumbent anyway get the transfer (these are the “wasted resources”). Secondly the weak opposers receive the transfer and they are mobilized to vote for the incumbent. And lastly, if the transfer is large enough, weak opposers are persuaded to vote for the incumbent as well. As previously mentioned, these results hold because the incumbent party wants to minimize the money spent on voters who would have voted for the incumbent in the absence of transfers.

Empirically, we find that the national incumbent from the Peronist Party allocates a larger number of PJDH plans to circuits where the party has less support. Moreover, we also find that when the provincial governors do not belong to the Peronist Party, this effect is amplified by allocating more plans to opposition strongholds in non peronist provinces than in the peronist ones. Therefore, although the plans were mainly allocated accordingly to the target population, there is a bias towards opposition strongholds. Moreover, although all the demographic variables

have the expected sign, we highlight the large effect of poorly constructed houses on the allocation of plans because of arguably large presence of the peronist party in poor towns (or shanty towns, according to anecdotal evidence).

We also find that the effect of perceived monitoring is large and significant, not only in explaining the allocation of plans but also votes and turnout. We also find that circuits more biased toward the peronist party vote more for that party, but have smaller turnout rates, probably due to less intense electoral competition. Another new result is that women-only tables turn out more. This is consistent with the role of women in the clientelist networks and the fact that they were recipients of the PJDH disproportionately. The remaining demographic and institutional variables have the expected signs: simultaneous elections are more competitive, incumbency is important to get more votes, and more poverty and less education favors the peronist party.

Finally, we find not only that the incumbent behaved strategically while allocating the spending on a poverty alleviating plan, but also that the money spent has an influence in mobilizing and persuading citizens to vote for the incumbent. Using our most conservative measures of the price of a vote and turnout during this period, we estimate that the Peronist incumbent could have bought between 0.4 and 1.6 million votes out of an electorate of 17 million voters.

In sum, we test the implications of a direct presidential campaign under the presence of the individual allocation of resources with the aim of persuading and mobilizing voters, and we show that, contrary to the previous predictions in the literature, an optimal campaigner focuses on opposition strongholds rather than safe or swing districts. These results come from our theoretical model and suggest that the debate on optimal campaigning and distributive politics should be enriched by exploring a third alternative: allocating more effort on opposition strongholds.

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6 Appendix

6.1 Proofs

Lemma 1.

For the proof of **Lemma 1**, we need to prove that when the value of the transfer is larger than the cost of cheating, $t_1^d \theta > q^d$, all voters accept the transfer

$$\min\{u_i(I|t^d), u_i(O|t^d)\} \geq \max\{u_i(I|no\ transfer), u_i(O|no\ transfer)\}, \forall i,$$

and all to the right $\bar{X} + \frac{q^d}{2\Delta_X}$ vote for the opposition nonetheless. Thus, all transfers to those voters are ineffective, since they vote as they would have voted before the transfers. On the contrary, if $\theta t^d \leq q^d$, then all voters who accept the transfer vote for the incumbent.

Proof. It suffices to show that $\forall x_i \geq \bar{X}$:

$$\begin{aligned} u_i(O|t^d) &\geq u_i(O|no\ transfer) & (8) \\ &\Leftrightarrow \\ b - (X_O - x_i)^2 + \theta t^d - q^d &\geq b - (X_O - x_i)^2 & \Leftrightarrow \quad \theta t^d \geq q^d \end{aligned}$$

And $\forall x_i \geq \bar{X} + \frac{q^d}{2\Delta_X}$:

$$\begin{aligned} u_i(O|t^d) &\geq u_i(I|t^d) \\ &\Leftrightarrow \\ b - (X_O - x_i)^2 + \theta t^d - q^d &\geq b - (X_I - x_i)^2 + \theta t^d & \Leftrightarrow \quad x_i \geq \bar{X} + \frac{q^d}{2\Delta_X} \end{aligned}$$

And so, for $\theta t^d \leq q^d$,

$$u_i(O|t^d) \leq u_i(O|no\ transfer) \leq u_i(I|t^d),$$

where the first inequality follows from (8), and the second one holds for all $x_i \leq \bar{X} + \frac{t^d \theta}{2\Delta_X}$ ■

Proposition 1.

The intuition is as follows: only consider party I for now and define two thresholds such that for any citizen i in district d whose ideology lies to the left of the turnout-buying threshold ($n_{tb}(t^d)$) then that citizen votes. And if his ideology is to the left of the vote buying threshold ($n_{vb}(t^d)$), then he votes for the incumbent. Hence, suppose that $n_{tb}(t^d) \geq n_{vb}(t^d)$, then all the voters whose ideology is between these thresholds, if any would vote for the opposition because the incumbent paid them enough to turnout but not enough to vote for I. On the other hand, if $n_{tb}(t^d) \leq n_{vb}(t^d)$, then those voters in between the threshold would vote for the incumbent if they were paid enough to turn out. Thus, the smaller threshold is the one that always binds.

Proof. Individual i with $x_i \leq \bar{X}$ prefers to accept the transfer $t^d \geq \frac{q^d}{\theta}$ and vote for I to not voting if $t^d \geq \frac{q^d}{\theta}$, and if:

$$u_i(I|t^d) \geq u_i(no\ turnout|no\ transfer) \Leftrightarrow |x_i - X_I| \leq \pm \sqrt{b + \theta t^d}. \quad (9)$$

Call $n_{tb}(t^d) \equiv X_I + \sqrt{b + \theta t^d}$, and notice that if there is only one party P , then a voter is mobilized if his ideology is such that:

$$x_i \in [X_P + \sqrt{b}, \min\{X_P + \sqrt{b + \theta t^d}, \bar{x}^d\}] \quad (10)$$

Or,

$$x_i \in [\max\{X_P - \sqrt{b + \theta t^d}, \underline{x}^d\}, X_P - \sqrt{b}] \quad (11)$$

For all i , the citizen prefers to accept the transfer $t^d \geq \frac{q^d}{\theta}$ and vote for I to voting for O without the transfer

if:

$$u_i(I|t^d) \geq u_i(O|no\ transfer) \Leftrightarrow x_i \leq \bar{X} + \frac{\theta t^d}{2\Delta_X}. \quad (12)$$

Define $n_{vB}(t^d) \equiv \bar{X} + \frac{\theta t^d}{2\Delta_X}$. We do not focus on the case of accepting the transfer and voting for O because that is ruled out by Corollary 1. Hence, if $n_{tb}(t^d) > n_{vB}(t^d)$, then:

$$\begin{aligned} x_i \leq \bar{X} + \frac{\theta t^d}{2\Delta_X} &\Rightarrow x_i \leq X_I + \sqrt{b + \theta t^d} \Rightarrow \\ &u_i(I|t^d) \geq u_i(O|no\ transfer) \\ &u_i(I|t^d) \geq u_i(no\ turnout|no\ transfer) \\ &u_i(I|t^d) \geq u_i(O|t^d) \end{aligned}$$

Then, for all i with $x_i \leq n_{vB}(t^d)$ votes for I. On the other hand, if

$$\begin{aligned} \bar{X} + \frac{\theta t^d}{2\Delta_X} \leq x_i \leq X_I + \sqrt{b + \theta t^d} &\Rightarrow \\ &u_i(I|t^d) < u_i(O|no\ transfer) \\ &u_i(I|t^d) \geq u_i(no\ turnout|no\ transfer) \\ &u_i(I|t^d) \geq u_i(O|t^d) \end{aligned}$$

Then, for all i with $n_{vB}(t^d) \leq x_i \leq n_{tb}(t^d)$, would vote for O, without accepting the transfer.

Furthermore, if $n_{vB}(t^d) \geq n_{tb}(t^d)$ then for $x_i \leq n_{tb}(t^d)$, it is straightforward that i would vote for I. And for $n_{tb}(t^d) \leq x_i \leq n_{vB}(t^d)$, the following holds:

$$\begin{aligned} X_I + \sqrt{b + \theta t^d} \leq x_i \leq \bar{X} + \frac{\theta t^d}{2\Delta_X} &\Rightarrow \\ &u_i(I|t^d) \geq u_i(O|no\ transfer) \\ &u_i(I|t^d) < u_i(no\ turnout|no\ transfer) \\ &u_i(I|t^d) \geq u_i(O|t^d) \end{aligned}$$

Thus, citizen i would not vote. Notice that so far, along the proof we have dismissed the ‘‘bound’’ of $X_O - \sqrt{b}$, because if $n_{tb}(t^d) = n_{vB}(t^d)$ then $X_O - \sqrt{b} = n_{tb}(t^d) = n_{vB}(t^d)$. ■

Proposition 2.

Assume $\theta t^d \leq q^d$ for all d ; and that the budget B is large enough such that $n(t^d) = n_{vb}(t^d) = \bar{X} + \frac{\theta t^d}{2\Delta_x}$.

Proof.

$$\max \sum_d N^d F^d(n(t^d)) \quad s.to \quad B \geq \sum_d F^d(n(t^d)) N^d t^d$$

Then, from the FOC for t^i we obtain:

$$\frac{\theta}{2\Delta_x} f^i(n(t^i)) N^i = N^i \lambda [t^i f^i(n(t^i)) \frac{\theta}{2\Delta_x} + F^i(n(t^i))].$$

And diving this equation by

$$\frac{\theta}{2\Delta_x} f^j(n(t^j)) = \lambda [t^j f^j(n(t^j)) \frac{\theta}{2\Delta_x} + F^j(n(t^j))],$$

obtained from t^j 's FOC, we get:

$$\frac{f^i(n(t^i))}{f^j(n(t^j))} = \frac{t^i f^i(n(t^i)) \frac{\theta}{2\Delta_x} + F^i(n(t^i))}{t^j f^j(n(t^j)) \frac{\theta}{2\Delta_x} + F^j(n(t^j))},$$

which can be rewritten as

$$t^j - t^i = \frac{2\Delta_x}{\theta} \left[\frac{F^i(n(t^i))}{f^i(n(t^i))} - \frac{F^j(n(t^j))}{f^j(n(t^j))} \right]$$

■

6.2 The Blotto game

In this section we construct a game in which both parties can spend money, but the incumbent enjoys a spending advantage $\frac{1}{\gamma}$, which could come either from a “clientelist” advantage, or just a larger amount of resources.

We simplify the problem by assuming that in each district there is a fixed proportion of opposition voters p_O , and that the remaining voters are split between loyalist to the incumbent and “uninformed” or undecided ones - p_I^d and u^d respectively - such that:

$$1 = p_O + p_I^d + u^d$$

Therefore we characterize each district in terms of the ratio p_I^d/p_O . A core district is one with a large ratio of loyalists to opposers, a swing district would be one with a similar proportion of loyalists to opposers, and an opposition stronghold would be one with a large ration of opposers to loyalists. Thus the maximization problem that parties face is choosing the distribution of transfers in each district such as they maximize total votes; for the incumbent:

$$\max_{\{F_I^d\}_1^D} \sum_d \mu^d N^d Pr^d(t_I > \gamma t_O) \text{ s.to B.C. } T_I = \sum_d \sum_i t_I^d \quad (13)$$

Claim 1 *There is no PSNE in this Colonel Blotto game. That is, for any unit mass point of F_p^d , exists a distribution of transfers such as party p wins for sure that district, spending as much as p' . (Myerson 1993)*

Proposition 3 *Given (T_I, T_O, γ) , the unique mixed strategy nash equilibrium when $T_I >_O$ has:*

- $F_I^d(t) = \frac{t}{2T_I} \frac{\gamma N^u}{\mu^d}$ for $t \in [0, 2T_I \frac{\mu^d}{\gamma N^u}]$
- $F_O^d(t) = 1 - \frac{\gamma T_O}{T_I} + \frac{t}{2T_I} \frac{\gamma T_O}{T_I} \frac{\gamma N^u}{\mu^d}$ for $t \in [0, 2T_I \frac{\mu^d}{\gamma N^u}]$

Thus, the incumbent's expected share of uninformed voters is $N^u[1 - \frac{\gamma T_O}{2T_I}]$. For a formal proof of the proposition look at section 5.1 in the appendix.

There are a couple of interesting results with respect of the political competition for the uninformed voters. In general terms, individuals in the districts with larger amounts of uninformed $\mu^{d,s}$ receive larger transfers from both parties. Regarding the expected transfers, in district d from the incumbent party is we get $E(t_I^{d,s}) = T_I^s \frac{\mu^{d,s}}{\gamma N^{u,s}}$, while from the opposing party: $E(t_O^{d,s}) = T_O^s \frac{\mu^{d,s}}{N^{u,s}}$. Regarding the variance for the incumbent and opposing party we get $V(t_I^d) = (\frac{T_I^s \mu^{d,s}}{3\gamma N^{u,s}})^2$ and $V(t_O^d) = T_O^s (\frac{\mu^{d,s}}{N^{u,s}})^2 [\frac{4T_I^s}{3\gamma} - T_O^s]$ respectively.

6.3 Empirical evidence

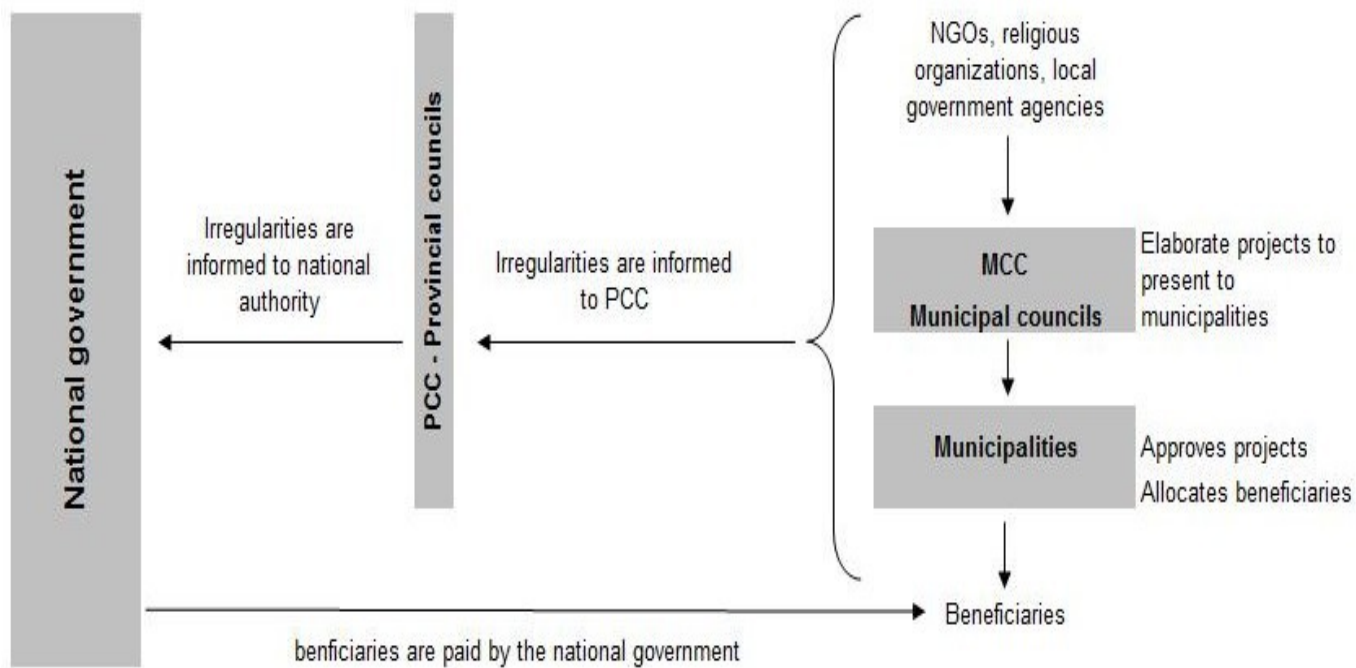
The “Program Jefes de Hogar”

It has been pointed out that the implementation of the “Program Jefes de Hogar” (PJDH) was characterized by a high level of decentralization, not only in terms of its execution but also in the formulation of needs. Although the PJDH was designed by the national government as an “universalistic” poverty-alleviating social program (see Galasso and Ravallion (2004)), its implementation required the potential beneficiaries to reach the local institutions to be able to receive the money. The target population, widely thought of as the unemployed heads of households, is by decree 565/02 defined as those, and also all “young” unemployed and elderly not receiving any other social plan. With this very lax definition of the target population, every unemployed citizen was legally a potential recipient of the plan.

The structure of the PJDH implies the involvement of three subnational mixed government institutions, two of them specially created to implement it: the Provincial Consultative Council (PCC), the Municipal Consultative Council (MCC), and the Municipalities. The PCC - specially created - was usually composed of a member of the current provincial government, plus representatives of provincial NGOs such as unions, religious associations, and other non-profit associations. The MCC were also composed of local government representatives and NGOs. The average size of a municipality varies widely between provinces but they are the lowest level of government in Argentina, and therefore any delegation to the municipalities represents the highest possible decentralization.

The bottom-up structure of the PJDH requires that the local institutions mentioned identify needs in the community - cleaning a street, painting a school, etc -, and elaborate projects within the MCC to be presented to the municipality. In turn, the municipality decides whether to approve the project; if approved, out of the registry of potential beneficiaries (voluntarily enlisted), it assigns beneficiaries to the projects. It will be clear now, that as a counterpart of the PJDH, the beneficiaries of the program have to work in community projects (i.e. NGO-proposed projects) or in productive activities (ie. privately-proposed projects), or they can opt to take training courses (either formal education, or professional training).

The national government pays directly to the beneficiaries selected by the municipalities. Therefore the MCCs and the municipalities are the most important actors in the formulation of needs, the registry of potential beneficiaries, the execution of the PJDH and the distribution of funds. The role of the PCCs is relegated to the supervision of certain irregularities, and to assist MCCs to solve disputes. All the information in this section comes from decree 565/02, resolution 312/02 from the “Labor Ministry”, and Galasso and Ravallion (2004).



Year	Party in power	Opposition	Comments
1983	RADICAL Raul Alfonsin	PERONIST	First democratic election after dictatorship
Presidential Elections			
1989	PERONIST Carlos Menem	RADICAL	
1994	Constitutional reform		
Presidential Elections			
1995	PERONIST Carlos Menem	RADICAL	The PERONIST incumbent is re-elected. Some members leave the peronist party and join the RADICAL into an electoral coalition: ALIANZA
Presidential Elections			
1999	ALIANZA Fernando De La Rua	PERONIST	
Economic and Political crises began.			
December 20th, 2001	De La Rua, quits. Puerta is in charge of the Presidency temporarily.		
December 22nd, 2001	Rodriguez Saa is appointed by the Congress.		
December 30th, 2001	Rodriguez Saa , quits. Camano is in charge of the Presidency temporarily.		
January 2nd, 2002	Duhalde is appointed by the Congress		
Presidential Elections			
2003	PERONIST Nestor Kirchner	FRAGMENTED	

Figure 4: Time line - Presidential succession in Argentina

Table 5: Different model specifications - Allocation of PLANS

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
IDEOLOGY	-83.93** (-2.21)	-85.09** (-2.23)	-78.75** (-2.15)	-82.79** (-2.10)	-82.72** (-2.10)	-71.13** (-2.00)	-65.84** (-2.01)
avgELIGvoters		-0.334 (-0.50)	-0.458 (-0.68)	-0.198 (-0.28)	-0.217 (-0.32)	-0.644 (-0.98)	-0.653 (-1.00)
ELIGvotersCIRC		-0.0418** (-2.56)	-0.0394** (-2.42)	-0.0286* (-1.71)	-0.0292* (-1.76)	-0.0419*** (-2.61)	-0.0455*** (-2.79)
logINITIALPLANS	355.8** (2.56)	361.3*** (2.61)	360.1*** (2.72)	394.3*** (2.78)	387.6*** (2.75)	255.4* (1.89)	268.0** (2.07)
URBANunemp	0.406*** (24.31)	0.387*** (6.02)	0.409*** (6.64)	0.411*** (6.20)	0.408*** (6.05)	0.419*** (6.50)	0.387*** (3.95)
RURALunemp1	-0.154 (-0.17)	-0.0517 (-0.06)	-0.187 (-0.23)	-0.241 (-0.28)	-0.183 (-0.21)	-0.375 (-0.48)	0.102 (0.12)
RURALunemp2	0.345 (0.97)	0.213 (0.58)	0.492 (1.51)	0.580* (1.77)	0.555* (1.70)	0.170 (0.48)	0.113 (0.28)
ideologyXsim	-1.015 (-0.03)	-2.284 (-0.06)	-6.974 (-0.20)	4.514 (0.12)	5.318 (0.15)	8.357 (0.23)	9.708 (0.26)
ideologyXinc	71.96* (1.67)	71.74* (1.70)	68.09* (1.65)	72.98* (1.69)	72.93* (1.69)	71.20* (1.77)	59.58* (1.78)
ideologyXaveragesize	-0.00415 (-0.11)	0.00747 (0.20)	0.0282 (0.80)	0.0159 (0.47)	0.0149 (0.44)	0.0114 (0.32)	0.00939 (0.26)
ideologyXrural	0.0134 (1.16)	0.0122 (1.05)	0.0119 (0.94)	0.0124 (1.03)	0.0125 (1.04)	0.00439 (0.40)	0.00411 (0.40)
logNOHIGHSCHOOL	-480.1 (-0.78)	-684.7 (-1.14)	-4885.6** (-2.53)				
logPOORHOUSE	908.0* (1.71)	1190.7** (2.12)	2159.4*** (2.83)				
population		0.00313 (0.35)	-0.0000482 (-0.01)	0.000931 (0.10)	0.00127 (0.13)	-0.00172 (-0.20)	0.0152 (0.47)
logHEALTH			3003.7** (2.24)				
loweducation				16.55 (0.32)	8.428 (0.17)	34.25 (0.66)	-34.40 (-0.53)
lowqualityhouse				-158.2 (-1.53)	-183.0 (-1.64)		
healthinsurance					-16.37 (-0.55)	77.81* (1.68)	
logcalmati						-8.839 (-0.02)	170.7 (0.49)
logcalmatii						186.9 (0.68)	117.8 (0.45)
logcalmatiii						0 (.)	0 (.)

Table 6: Different model specifications - Allocation of logPLANS

	(1)	(2)	(3)	(4)	(5)	(6)
IDEOLOGY	-0.033*** (-5.04)	-0.012*** (-3.81)	0.0018 (1.38)	-0.015*** (-2.88)	-0.013*** (-2.77)	-0.012** (-2.49)
ELIGvotersCIRC						-0.000082** (-2.55)
avgELIGvoters						0.00020* (1.79)
TABLESbyCIRCUIT						0.041*** (2.98)
URBANunemp	0.000029*** (7.56)	0.000028*** (6.99)	0.0000028*** (2.97)	0.000021*** (6.58)	0.000020*** (6.35)	0.000018*** (6.53)
RURALunemp1	0.00037* (1.88)	0.00042** (1.98)	-0.00017** (-2.33)	0.00024 (1.36)	0.00038** (2.22)	0.00034** (2.21)
RURALunemp2	0.00019* (1.82)	0.00026** (2.40)	0.000069* (1.93)	0.00042*** (4.36)	0.00036*** (4.07)	0.00039*** (4.65)
ideologyXsim	-0.014 (-1.01)			-0.015 (-1.29)	-0.012 (-1.13)	-0.012 (-1.13)
ideologyXinc	0.014** (1.99)			0.0080 (1.46)	0.0072 (1.39)	0.0070 (1.34)
ideologyXaveragesize	0.0000083 (0.96)			0.000026*** (3.49)	0.000021*** (2.96)	0.000017** (2.36)
ideologyXrural	0.000013*** (4.86)			0.0000083*** (3.39)	0.0000083*** (3.78)	0.0000081*** (3.75)
logNOHIGHSCHOOL			0.84*** (8.45)			
logPOORHOUSE			0.20** (2.00)			
loweducation				-0.067*** (-5.52)	-0.093*** (-7.13)	-0.088*** (-6.62)
lowqualityhouse				-0.066** (-2.02)	-0.13*** (-3.47)	-0.14*** (-3.54)
healthinsurance					-0.046*** (-4.77)	-0.041*** (-4.46)
population						
_cons	7.35*** (66.39)	7.24*** (69.52)	-2.69*** (-6.26)	13.3*** (14.66)	18.0*** (13.76)	17.3*** (13.33)
<i>N</i>	4846	4846	4846	4846	4846	4846
<i>R</i> ²	0.623	0.605 ⁴⁰	0.862	0.715	0.735	0.748
adj. <i>R</i> ²	0.620	0.602	0.861	0.713	0.733	0.746

t statistics in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

