

# Party machines and voter-customized rewards strategies

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## Abstract

Previous works on vote-buying have highlighted that an informational advantage allows party machines to efficiently distribute discretionary transfers to voters. However, the microfoundations that allow party machines to electorally exploit their informational advantage have not yet been elucidated. The probabilistic model in this paper provides the microfounded mechanism that explains how party machines translate, with a voter-customized strategy, their informational advantage into more efficient allocation of discretionary transfers and win elections with higher probabilities than their contenders. Furthermore, its probabilistic design allows the model to account for why party machines target their own supporters with discretionary transfers. In-depth interviews with 120 brokers from Argentina motivate the model.

## Keywords

Asymmetric information; brokers; party machines; price discrimination; vote-buying

## 1. Introduction

Political history is full of successful electoral machines. Well-known examples include Daley's machine in Chicago, the Revolutionary Institutional Party in Mexico, and the Peronist Party in Argentina. Scholars argue that a key element in the electoral success of party machines is their networks of brokers through which they gather better information about voters than their rivals (Levitsky, 2003;

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Rakove, 1975; Stokes, 2005). Illustratively, Wang and Kurzman say that a Kuomintang broker in Taiwan is a 'walking encyclopedia of local knowledge' (2007: 64). Particularly relevant is that brokers know voters' party preferences and degree of support for the available candidates (Stokes et al., 2013; Zarazaga, 2014). Surprisingly, none of the models in the growing formal literature on vote-buying formally shows how party machines incorporate their informational advantage into their strategies to win elections. By contrast, this paper makes a contribution by formally showing that party machines exploit their informational advantage and shield their base of support by implementing a 'voter-customized strategy'. Through a customized strategy party machines use their private information about voters' reservation values (i.e., the lowest price at which an individual will 'sell' his or her vote) in order to price-discriminate in their allocation of discretionary transfers. The model proves that by implementing this strategy, party machines have a greater probability of electoral success than their counterparts.

A major contribution of the paper is to show the microfoundations that allow party machines to exploit their informational advantage. On one hand, some of the most cited formal models on vote-buying ignores party informational advantage and assume that party machines just offer a uniform reward to all voters (Nichter, 2008; Stokes, 2005). Such a strategy would imply a waste of resources, as the party machine would be promising the same amount of resources to voters that it knows have different reservation values. On the other hand, other formal models claim their informational advantage allows party machines to efficiently distribute discretionary transfers to voters, thus acquiring an electoral advantage over their contenders (Cox and McCubbins, 1986; Dixit and Londregan, 1996). However, these models assume that more complete information automatically translates into a more efficient allocation of resources without assigning any role to private information about voters in the party machines' strategy. In other words, these models make no attempt to explain the microfoundations that allow party machines to exploit their informational advantage. An exception is Stokes et al. (2013) who argue that brokers target voters already attached to the party machine because these voters are cheaper. But the authors do not formally derive party machines' equilibrium offers to voters. In contrast, the model presented in this paper incorporates the party machines' private information about voters in a probabilistic environment and elucidates the strategy that allows the party machine to exploit this informational advantage in order to win elections; the voter-customized strategy.

The customized strategy is in the class of the leveling strategies defined by Groseclose and Snyder (1996). This authors' model shows that if two parties sequentially try to buy a majority vote in a legislature, the party moving first will buy a supermajority winning coalition and a leveling strategy will be always a possible equilibrium. With this strategy the first party moving promise rewards making each bribed voter to be equally expensive to recover for its opponent; it levels the payoffs of all bribed voters. Our voter customized strategy also takes the form of a leveling strategy. As in their model, in equilibrium, the party machine leaves a set of rewarded voters in which each voter is equally expensive to be bought by the opponent party. However, as in the model in this paper parties have asymmetric

information and move simultaneously, the analysis varies in that the party machine only rewards the supporters needed to win and the customized strategy is its unique optimal strategy.

Parties using a customized strategy target voters only in the half of the distribution of voters more likely to favor them, and customize rewards to these voters based on the risk of them voting for the other party. The model proves that by implementing this strategy, party machines that maximize their expected payoff have a greater probability of electoral success than their counterparts. In this way the paper contributes to our understanding of party machines' frequent electoral hegemony.

Furthermore, the customized strategy in the context of the model's probabilistic design speaks to the ongoing debate in the vote-buying literature over which type of voters—core, swing, or opposed—machines are more likely to target. A pending and fundamental question in this debate is why party machines should need to buy the votes of their own partisans—their core group—when such voters are already inclined to vote for them. In the electoral arena, many factors beyond parties' control—such as economic downturns, scandals, or campaign blunders—can unexpectedly change voters' electoral choice. Even after promising transfers to voters, parties remain uncertain about how they will actually vote. The probabilistic model incorporates this uncertainty and reveals that party machines use a customized strategy to target their own supporters in order to compensate for unexpected factors and prevent defections. The model is underpinned by a new conceptual framework which suggests that, when party machines make transfers to voters, they do not buy a 'sure vote' so much as the probability of receiving a vote.

Scholars highlight that the Argentine Partido Justicialista (the Peronist Party, or PJ) is a typical party machine that commands substantially larger networks of brokers and better volumes of information than its competitors (Auyero, 2001; Levitsky, 2003; Zarazaga, 2014). Given this consensus and the PJ's extraordinary record of electoral success, I use the PJ as the case to illustrate the model. In this paper I focus on modeling electoral competition between parties with asymmetric information. Given that brokers are the source of private information, I motivate the formal analysis with evidence drawn from 120 in-depth interviews with Argentine brokers, 112 of whom worked for the PJ (see the Data Appendix).

This paper proceeds as follows. First, I motivate the model with evidence showing that information is a non-tangible but highly valuable component of clientelistic strategies. Second, I state the contributions of this model with respect to the previous literature. Next, I develop a formal model that captures parties' electoral competition with asymmetric information about voters. Finally, I discuss the results of the model.

## **2. Party machines, brokers, and information**

Argentina has long been recognized as a country in which vote buying plays a central role. Recent interviews conducted with 120 brokers reveal three stylized facts.

1. Networks of brokers provide party machines with an informational advantage.
2. Brokers efficiently distribute rewards according to the information they possess about voters' party preferences.
3. Brokers mainly target voters already inclined to vote for their parties in order to secure their votes in the face of uncertainty.

These facts, which I highlight in this section, are foundational to the model developed later in the paper.

Brokers (called 'punteros' in Argentina) are neighborhood party agents. Deeply immersed in poor areas, they distribute rewards to voters to garner votes for their political bosses. The average age of brokers is 48 years and their average length of service is 19 years. Ninety-two per cent (110) of the brokers I interviewed live in the same neighborhood where they need to ensure electoral victory for their political bosses. Brokers' embeddedness in the communities gives the PJ an advantage for collecting information and delivering goods to poor voters that is hard for any other party to match (Calvo and Murillo, 2013). Former Interior Minister and Radical Party leader, Enrique Nosiglia, affirmed that the 'the Radical Party has almost no brokers in the slums. It is hard to compete in these conditions with the PJ.'<sup>1</sup> When I asked brokers in an open question what the fundamental keys to being a broker were, 72% (86) of them mentioned in some form 'knowing the people.' For example, a broker declared, 'I know everybody in my neighborhood and everybody knows me. Even the parrots in the trees call my name when I walk these streets.'<sup>2</sup>

Brokers are well informed about their clients' socioeconomic situation. Eighty-seven per cent (104) of the brokers said they were able to name the most urgent need of each family.<sup>3</sup> A PJ broker told me, 'I know their situation every minute. When Matilde, the old lady across the street, passed away, nobody told me but I knew they did not have money for the coffin so I showed up with it. When spring comes, I know that the mother of the asthmatic boy from two blocks down cannot afford the medication so I get it for her from the Mayor. Nobody could ever help them like me.'<sup>4</sup> Other empirical works largely confirm that brokers command this sort of information (Auyero, 2001; Levitsky, 2003; Zarazaga, 2014).

A key piece of information that brokers collect for being efficient at vote-buying is clients' party preferences. Seventy-three per cent (82) of the PJ brokers claimed to know which party their clients prefer.<sup>5</sup> This knowledge allows brokers to secure clients' votes at the lowest possible price. A broker captured this mechanism well: 'I know my people. They have been Peronists all their lives. They cannot pretend that they will vote Radical if they do not get a fortune. I know what to give them to have them with me.'<sup>6</sup> Another broker also explained, 'I know I would need a lot of resources to have that Radical family in the next street support me in the secret booth, so I forget about them. For half of the resources I get the support of all the families on this block that I know have always been Peronists.'<sup>7</sup> Owing to the information they gather about voters' party preferences, brokers buy votes decreasing the amount of the transfers they promise in voters' increasing preferences for the

party machine. In this way they can use resources more efficiently and win elections more often than their rivals.

While the evidence shows that party machines target voters according to their party preferences, it also reveals that they target mainly their own supporters. Most of the brokers I interviewed consider their followers to be predominantly Peronists. A broker said ‘resources are to be distributed among your partisans,’<sup>8</sup> while another one proudly told me ‘...all that I have is exclusively for *los compañeros*’<sup>9</sup> (companions, term used in Argentina to refer to Peronist supporters). Stokes (2005) reports results showing that the broad sector of voters receiving rewards from PJ brokers (60%) labels the PJ as good. In a survey experiment Stokes et al. (2013) find that around two thirds of the brokers surveyed (682) considered that brokers distribute more resources to voters that prefer their parties.

When asked the reasons for targeting their own supporters, brokers explained that they need to secure their votes. Most PJ brokers admitted that they were never certain of how their followers will vote. Unexpected economic crises, campaign blunders, terrorist attacks, and many other factors beyond the candidates’ control frequently affect voters’ choices and the course of an election. As one broker explained: ‘... you never know. Sometimes you think they are with you, but then your candidate does something ridiculous on TV or just the opposition candidate appears on a show and you go several steps back in the game.’<sup>10</sup> Brokers target supporters to shield their base of support against unexpected events or those beyond their control. Illustrating how uncertainty induces clientelistic parties to target supporters, a broker said, ‘You need to nurture the vote of your loyal supporters by giving them handouts. If not you might one day get the unpleasant surprise that they are playing for someone else.’<sup>11</sup>

The model well captures electoral competition in Argentina where the PJ enjoys an informational advantage through its networks of brokers and an electoral supremacy over the Radical Party. While Argentina has a multiparty system, the PJ has a clear electoral supremacy and only the Radical Party had the opportunity to defeat it. After the return to democracy in 1983, the PJ has won five out of seven presidential elections. The Radical party only won in 1983 and, within a coalition, in 1999. In the last two presidential elections the PJ won with more than 45% of the affirmative valid votes, exceeding the threshold that the run-off system establishes for a second round. The model also captures well electoral competition in the 33 municipalities that surround the city of Buenos Aires and make up the most important electoral jurisdiction, the Conurbano Bonaerense. This jurisdiction has a population of more than 10 million, accounting for 26% of the national electorate, concentrated in around 1.2% of the national territory. PJ mayors command large networks of brokers inserted in poor neighborhoods in these municipalities, making it hard for any opposition candidate to challenge them (Zarazaga, 2014). Since re-democratization in 1983, the PJ has won 207 out of 247 (84%) elections for mayor in the Conurbano Bonaerense and today governs 30 of its 33 municipalities. As captured by the model, challengers to PJ mayors compete with an informational disadvantage as they do not have the networks of brokers to efficiently buy votes.

The model sheds light on the strategies of political machines beyond the case of the PJ in Argentina. Evidence from other countries suggests that other party machines around the world also enjoy an informational advantage and use a customized strategy to efficiently reward their own supporters. For example, according to Magaloni (2006: 81), in Mexico local politicians affiliated to the Partido Revolucionario Institucional (PRI) 'employ dense organizational networks in order to acquire knowledge about voters' loyalties and to target benefits.' Rakove (1975: 4) also suggests that brokers in Chicago made payments according to a customized strategy: 'Every man has his price, according to the machine, and the major problems are to find out what that price is and whether it is worth paying.' The next section shows to what extent this evidence is consistent with theories from the previous literature.

### **3. Information and rewards in previous models**

Based on this evidence, the model below contributes to the existing literature in three important ways. First, it reveals the microfounded mechanism that explains how party machines exploit their informational advantage. Second, it provides a rationale for party machines to target their own supporters with clientelistic rewards. Finally, it proves that party machines win more often than their rivals.

Some of the most cited authors modeling electoral competition between two parties do it in an environment without asymmetries between competing parties. Consequently, their models usually predict a symmetric equilibrium and a draw between parties in the electoral result (Myerson, 1993; Persson and Tabellini, 2000). Myerson's work, for example, analyzes conditions under which parties have incentives to make campaign promises to some group of voters. As in his benchmark model, in this model each voter votes for one of two parties and the party with the majority of the votes wins. However, in this model voters differ in their party preferences and parties compete with asymmetric information about these preferences. In contrast with Myerson, in the model in this paper there is not a symmetric equilibrium and the better informed party wins more often than the less informed party. In Greene's (2007) model the party machine also wins more often than its rival. However, in Greene's model the party machine does not enjoy an informational advantage but an incumbency advantage; the party machine is in power and monopolistically controls the resources. By extending Dixit and Londregan's (1996) asymmetric case of electoral competition into a probabilistic environment and fully solving the dynamic game between two parties, this paper shows the mechanism that party machines employ to exploit their informational advantage. Brokers' informational advantage allows party machines to employ a voter-customized strategy that boost their electoral probabilities of winning. This result also differs from Stokes et al. (2013), for whom private information does not make party machines necessarily more competitive because brokers mainly use it to increase their rents, not to improve their parties' chances of victory. The present study, instead, shows that brokers' informational advantage is a critical competitive advantage for party machines that helps these parties to remain in power.

Along with parties' information about voters, another central question in the previous literature is which voters are targeted by party machines: core, swing, or opposition voters. For instance, Cox and McCubbins (1986) argue that since parties know better and can allocate resources more efficiently within their constituencies, they target core voters rather than swing voters. By contrast, Lindbeck and Weibull (1987) set up a model where, in equilibrium, parties target swing voters. Dixit and Londregan (1996) establish conditions under which parties target one group or the other. For the Argentine context, Stokes (2005) argues that the PJ brokers target swing voters, while Nichter (2008) argues that brokers target their supporters to persuade them to turn out.

Qualitative and quantitative evidence mainly shows that party machines reward their own supporters. However, it remains a challenge to explain why parties spend resources on voters who already vote for them (Lindbeck and Weibull, 1987; Stokes, 2005). Some authors answer this question by saying that brokers transfer to supporters not to buy their votes but to induce them to turn out (Nichter, 2008). However, voting is compulsory in Argentina and parties do not need to pay voters simply to turn out. Stokes et al. (2013) argue that although party machines seek to target swing voters, brokers divert resources to core voters in order to have a group of followers for less money and so keep more rent for themselves. However, brokers are monitored by their bosses and need to win elections to keep their positions. Brokers have strong incentives to distribute resources efficiently and win elections (Szwarcberg, 2012).

Consistent with the available evidence, the probabilistic model in this paper shows that party machines target their supporters, as mentioned earlier, to shield their electoral coalition against unexpected events. As Stokes et al. (2013: 111) recognize in their survey, 'some brokers used the verb to 'assure'— giving the impression that respondents saw these voters as possibly voting for the party of their own accord but only being certain to do so if they received some direct benefit'. To bring clarity to the debate, I therefore speak of 'conditional supporters,' rather than 'core voters,' to describe voters that support the party machine *ex ante* transfers. They are conditional supporters because they will vote for the party machine only as long as unexpected events do not persuade them to do otherwise.

While the model shows that party machines target conditional supporters, in contrast to Stokes et al. (2013) the most loyal voters do not receive most of the resources. In their model, as brokers want to have the largest possible network of clients and save resources for themselves, they target first the most loyal of all voters because they are the cheapest. In this paper instead, the most loyal voters get very few resources, if any, because these voters will probably support the party in any case, even in the absence of any reward.

In the model proposed in this paper, parties face a trade-off between increasing the probability of winning by offering more to voters and extracting less rents if they win the election. Costless capture is not possible in this environment, as it is in Dal Bó's model (2007). He shows the surprising result that a party offering rewards to voters can manipulate the group's decision at no cost. Since he is mainly capturing vote-buying of committee members, his benchmark model imposes the

assumption that a party buys votes observing how each voter cast their vote, and thus can promise payments to a voter contingent on having been pivotal to the result. It also assumes that voters do not care about the expressive value of their votes. Because the present model seeks to capture competition between two parties in a general election, it departs from these two assumptions; parties do not know how each voter cast her vote and voters care about the expressive value of their votes. In this environment voters have a cost for voting against their preferences and parties can promise rewards contingent on the general result of the election, but not on whether a voter was pivotal in the election. Consequently, in this model vote-buying is costly for both parties. By introducing competition among two parties with asymmetric information about voters' reservation value, the model that follows next shows that the party with better information can win more often than the less informed party because price-discrimination allows it to lower the costs of buying conditional supporters.

#### 4. Vote-buying with asymmetric information

This model analyzes electoral competition between two parties that have asymmetric information about voters' party preferences.<sup>12</sup> More precisely, one party can identify the position of each voter in the party preferences spectrum, whereas the other cannot. Both parties seek to win an election to control a pre-determined budget. In order to increase the odds of winning, each party courts voters by promising them transfers, which the winning party will honor by assumption. Given this commitment, the transfers are costly and reduce the size of the budget available to the winning party. Thus, each party faces a trade-off between increasing its probability of winning by offering more to voters and having fewer resources if it actually wins the election.

##### 4.1. Model setup

The game is a simple probabilistic voting model with two parties,  $P$  and  $R$ , and a continuum of voters  $i$  with mass one. The parties begin the game by making simultaneous offers to the voters. The party that gets a majority of the votes takes office and gains control of budget  $B$ , out of which it pays the promised transfers. Although incumbent parties have better access to resources, since this model aims to capture party machines' informational advantage I assume, as previous works do (Dixit and Londregan, 1996), that the budget  $B$  is exogenous to parties.

In this model voters are distinguished by their party preference for  $P$  which is denoted by  $\pi_i \in [-1, 1]$ , where the most adverse voter to  $P$  is the voter  $\pi_i = -1$ , and the most favorable is the voter  $\pi_i = 1$ . Party preferences are uniformly distributed between  $-1$  and  $1$ . Since party preferences distinguish voters, from now on I will refer to voters just by  $\pi$ . I next characterize voters' preferences.

Voters care about parties' transfers, but they also derive utility from their non-pecuniary preferences over parties, described here as party preferences. Voters thus vote to maximize their utility functions, which depend on transfers and party

preferences. As in previous work about vote-buying, I assume that voters vote sincerely (Dixit and Londregan, 1996; Gans-Morse et al., 2009; Morgan and Várdy, 2012).<sup>13</sup>

The partisan utility for  $\pi$  of voting for  $P$  is  $-\gamma(1 - \pi)^2 + b$ , where the parameter  $b$  measures the bias of all voters toward Party  $P$ , and the parameter  $\gamma(> 0)$  captures the salience of partisan preferences. Therefore, the total payoff for a voter  $\pi$  for voting for  $P$  is given by

$$U_{\pi}(P) = -\gamma(1 - \pi)^2 + t(\pi) + b + \delta$$

where  $t(\pi)$  is what  $P$  promises to a voter with party preference  $\pi$  if that voter votes for  $P$  and where  $\delta$  represents a stochastic shock toward Party  $P$  common to all voters that is uniformly distributed in the interval  $[-u, u]$ . Formally—as in other probabilistic voting models—this shock makes the probability of winning a random variable; substantively it represents any random event—such as an economic downturn, a scandal, or a campaign blunder—that affects the popularity of a party's candidate, and thus the electoral outcome. It captures the uncertainty parties have about voters' ultimate behavior at the polls; while voters know how the shock affects their utility before voting, parties make promises without knowing the effect of the shock.

Similarly,  $\pi$ 's partisan utility of voting for  $R$  is  $-\gamma(1 + \pi)^2$  and the total payoff for voting for  $R$  is given by

$$U_{\pi}(R) = -\gamma(1 + \pi)^2 + r$$

where  $r$  is a lump sum  $R$  offers to every voter. For convenience, I label the difference between  $\pi$ 's partisan utility of voting for  $P$  and  $\pi$ 's partisan utility of voting for  $R$  the *reservation value*  $V(\pi)$  of voter  $\pi$  such that  $V(\pi) = (-\gamma(1 - \pi)^2 + b) - (-\gamma(1 + \pi)^2)$ . By algebra,  $V(\pi) = 4\gamma\pi + b$ . To simplify the notation, let  $4\gamma = k$ . Therefore,  $\pi$  prefers  $P$  if  $\pi$ 's differential utility for voting for  $P$  is positive; that is, if its reservation value plus  $P$ 's transfer, minus  $R$ 's transfer, plus the shock, shields a positive utility. Formally,  $\pi$  prefers  $P$  if  $k\pi + b + t(\pi) - r + \delta \geq 0$ .

Party  $P$  and Party  $R$  court voters by promising transfers, but they have asymmetric information about voters' party preference  $\pi$ . To model this asymmetry as simply as possible, I assume  $P$  knows each voter's party preference  $\pi$ , whereas  $R$  just know that those preferences are uniformly distributed over  $[-1, 1]$ . Thus the difference is that  $P$  can identify the position of each voter in the distribution whereas  $R$  cannot. Since  $P$  knows  $\pi$ , it can condition its offer to voters on it. Hence, a strategy for  $P$  is a function  $t(\pi)$  for all  $\pi \in [-1, 1]$ , where  $t(\pi)$  is the transfer promised to a voter with ideological preference  $\pi$ . By contrast,  $R$  does not know  $\pi$  and therefore cannot condition its offer on it. In the light of this, I assume that  $R$ 's strategy is the same offer  $r$  to every voter. This assumption captures the competition between a clientelistic party with extended networks and superior information that promises discretionary goods to voters (such as the Peronists in poor districts in Argentina) and a party without such information that can only

offer non-discretionary transfers (such as the Radical Party in Argentina in 2009 promising a general income for every citizen).

### 4.2. Vote-buying and electoral outcomes

In seeking to win the election parties make simultaneous promises to the voters affecting their utilities. Figure 1 provides some intuition as to how parties' promises affect voters' utilities for a given  $b > 0$ , and before the shock takes place. In this graph the horizontal axis represents voters' party preferences, and the vertical axis represents voters' differential utility for voting for  $P$ . The line  $k\pi + b$  graphs voters' reservation values for voting for  $P$  before any transfers are promised from either party. In this case voters to the left of the cut point  $x$  vote for  $R$ , and those to the right of  $x$  vote for  $P$ . Below line  $k\pi + b$ , the line  $k\pi + b - r$  graphs voters' differential utilities for voting for  $P$  after  $R$  makes the lump-sum offer  $r$ . By promising  $r$ ,  $R$  shifts the line down to  $k\pi + b - r$ , increasing its vote share from the cut point  $x$  to the cut point  $x'$ . Also notice that the line  $k\pi + b - r$  is parallel to the line  $k\pi + b$ . This is because  $R$  offers the same amount  $r$  to each voter, affecting equally each voter's utility.

Party  $P$  promises transfers, but is able to do that taking into account its private information about voters' reservation values. Unlike  $R$ , party  $P$  can transfer different amounts to different voters. Consequently the line  $k\pi + b - r + t(\pi)$  that includes  $P$ 's promises will not necessarily be parallel to the line  $k\pi + b - r$ . In fact, the next section shows that, in equilibrium,  $P$  customizes its promises to voters' reservation values in such a way that voters' differential utilities are not equally affected and consequently the line  $k\pi + b - r + t(\pi)$  is not parallel to the line  $k\pi + b - r$ . This is an important feature of the model, as it captures party machines' advantage over their competitors. For example, the Daley machine in Chicago and

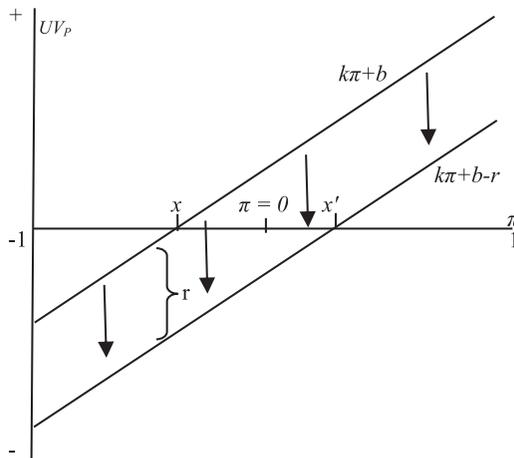


Figure 1. Voter's payoffs.

the PJ in Argentina mold transfers to voters according to the private information they gather through their brokers.

However, after making promises parties do not know how voters will cast their votes. As shown by the evidence, brokers are not even sure if those voters who receive promises from them will actually support them with their votes. This uncertainty is captured in the model by the shock that takes place after parties make promises and shifts all voters' payoff by the same amount. The line that represents voters' payoffs would move up with a shock  $\delta > 0$ , and down with a shock  $\delta < 0$ . Obviously, for  $\delta = 0$ , the line stays in the same place it was after both parties made their promises. Because there is a shock, the outcome of the election is probabilistic.

Now that we have an intuition of how the random component of the model works, let's develop some key notation and formalize parties' payoffs. I denote  $\Delta_P(t(\pi), r) \in [0, 1]$  the measure of the set of voters who vote for  $P$  given strategies  $t(\pi)$  and  $r$ . This measure will depend on the stochastic shock and will define the probability that Party  $P$  wins; that is, that the measure of voters is above  $\frac{1}{2}$ :  $\Pr[\Delta_P(t(\pi), r) \geq \frac{1}{2}]$  Then  $P$ 's payoffs are

$$UP_{(t(\pi), r)} = \begin{cases} B - \int_{\Delta_P(t(\pi), r)} t(\pi) d\pi / 2 & \text{for } \Pr[\Delta_P(t(\pi), r) \geq \frac{1}{2}] \\ 0 & \text{for } \Pr[\Delta_P(t(\pi), r) < \frac{1}{2}] \end{cases}$$

The first line captures the utility for  $P$  when it wins the election, i.e. at least half of the electorate vote for it. In this case it gets the budget  $B$  minus its total costs, that is, minus the integral over the transfers to every voter. The second line expresses what  $P$  gets if it loses the election, i.e. less than half of the voters vote for it.<sup>14</sup> Since voters are uniformly distributed over  $[-1, 1]$ , the assumption that they have mass one implies that the density of voters' ideal points is given by  $\pi/2$ .

Similarly, by letting  $\Delta_R(t(\pi), r) \in [0, 1]$  denote the measure of the set of voters who vote for  $R$ ,  $R$ 's payoffs are

$$UR_{(t(\pi), r)} = \begin{cases} B - \int_{-1}^1 r d\pi / 2 & \text{for } \Pr[\Delta_R(t(\pi), r) > \frac{1}{2}] \\ 0 & \text{for } \Pr[\Delta_R(t(\pi), r) \leq \frac{1}{2}] \end{cases}$$

Note that, as in previous work about vote-buying, parties only face the costs for promising rewards if they win the election (Cox and McCubbins, 1986; Dixit and Londregan, 1996). As a broker said: 'During the campaign you make promises to your followers, and if you win you better deliver. If not, people will not follow you ever again.'<sup>15</sup>

$R$  as well as  $P$  maximize their expected utility function, given respectively by

$$U_P(t(\pi), r) = \left( B - \int_{\Delta_P(t(\pi), r)} t(\pi) d\pi / 2 \right) \left( \Pr[\Delta_P(t(\pi), r) \geq \frac{1}{2}] \right)$$

$$U_R(t(\pi), r) = \left( B - \int_{-1}^1 r d\pi / 2 \right) \left( \Pr[\Delta_R(t(\pi), r) > \frac{1}{2}] \right)$$

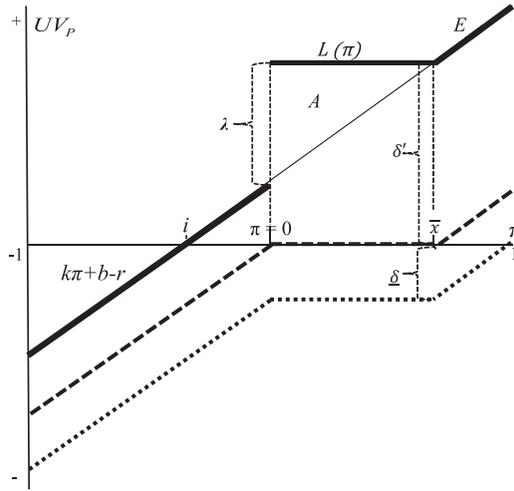


Figure 2. P's voter-customized strategy payoffs.

### 4.3. Strategies

Next, I find Party  $P$ 's best response to Party  $R$ , and vice versa. We know that  $R$  promises the same amount to every voter, so its best response to a strategy  $t(\pi)$  is the level of  $r$  that maximizes its utility given  $t(\pi)$ . Conversely,  $P$ 's best response will be the amount  $t(\pi)$  it promises to each non-zero measure subset of voters that maximizes its utility given  $R$ 's strategy. Formally, Party  $P$ 's best response is  $br_P(r) \in \arg \max_{t(\pi)} U_P(t(\pi), r)$ , where  $t \in T$ , and  $T$  is the set of all the integrable functions over  $[-1, 1]$ , such that  $\int_{-1}^1 t(\pi) d\pi / 2 \in [0, B]$ . Similarly, Party  $R$ 's best response is  $br_R(t(\pi)) \in \arg \max_r U_R(t(\pi), r)$  where  $r \in [0, B]$ .

Finding  $P$ 's best response seems to be a hard problem because there are no obvious restrictions on the properties of  $t(\pi)$ . It turns out, however, as will be demonstrated shortly, that  $P$ 's best response takes the simple form of a voter-customized strategy. Before proceeding with the formal proof, it will be convenient to provide in the next subsection some intuition about the nature and structure of such strategy.

*Intuition behind a voter-customized strategy* As a customized strategy takes a form akin to Groseclose and Snyder's 'leveling strategy,' it is denoted by  $L(\pi)$ . In a customized strategy  $P$  buys from the median voter ( $\pi = 0$ ) to the right until it reaches a certain cut-point voter  $\bar{x}$ , to be determined. The segment of voters that receive a promise from  $P$  is represented in Figure 2 by the solid horizontal line under the label  $L(\pi)$ .

The amounts it promises to each of these voters between the median and the cut-point voter ( $\bar{x}$ ) decrease monotonically from left to right because, owing to its informational advantage,  $P$  can decrease transfers as voters' support for it increases (as captured in Figure 2 by the triangular area  $A$  that represents  $P$ 's diminishing

transfers from right to left). In other words, in a customized strategy the most expensive voter for  $P$  is the median (in Figure 2,  $P$  promises to the median the amount denoted by  $\lambda$ ) and then the transfers monotonically diminish to the right with voters increasing party preference for  $P$  until the cut-point voter  $\bar{x}$ . This implies that all those voters receiving transfers end up with the same level of differential utility (as captured in Figure 2 by the solid horizontal line under the label  $L(\pi)$ ). Obviously, not every voter receives a promise from  $P$ ; voters to the left of the median do not get any. Neither do the voters ideologically very close to  $P$ , who will probably vote for it no matter what (see the diagonal segment label  $E$  in Figure 2). I illustrate next how strategies and the random component interact in the model. I call  $\delta'$  the minimal shock for which  $P$  wins with a customized strategy  $L(\pi)$ . Formally:  $\delta' = \min\{\delta : \Delta_P(L(\pi), r) \geq \frac{1}{2}\}$ .

In Figure 2 the diagonal solid line represents voters' differential utilities after receiving the promise  $r$  from  $R$ , but before  $P$  makes any promise and the shock takes place ( $\delta = 0$ ).<sup>16</sup> Note that every voter to the right of voter  $i$  is voting for  $P$ . The horizontal solid line under the label  $L(\pi)$  incorporates voters' differential utilities after  $P$  makes its promises and before the shock takes place. Note now that the voters between the median and the cut-point voter  $\bar{x}$  receive the transfers represented by the triangular area  $A$  and that they all get the same differential utility of voting for  $P$ . More important, note that by promising this area  $A$ , party  $P$  has protected itself against adverse shocks except the most severe ones. For  $P$  to lose now the adverse shock has to be of a magnitude bigger than  $\delta'$ , as captured in Figure 2 by the dotted vertical line labeled  $\delta'$ , and the downward displacement of the solid line to the broken one. Furthermore, the dotted line on the bottom of Figure 2 represents voters' differential utilities for the worst possible shock against  $P$ ; that is, for a shock  $-u$ . This means that  $P$  only loses for the small segment of shocks represented in Figure 2 by the short dotted vertical line labeled  $\underline{\delta}$ .

Note that for a distribution in which the median voter is indifferent or favors party  $P$ , that is for a  $b \geq 0$ ,  $P$  targets voters that ex ante transfers are supporters. I call these voters 'conditional supporters' because they are  $P$  supporters before promises are made, but might cease to be after an adverse shock for  $P$ . Once parties promise transfers to conditional voters, I call them 'shielded voters' because, as said before, they will vote for  $P$  for every shock except the most adverse ones to  $P$ . Figure 2 makes possible to visualize why  $P$ 's informational advantage lets that party target voters in such a way that it shields the electoral result against most adverse shocks. Obviously, this does not mean that  $P$  will always win—for the worst shocks against it,  $P$  will lose—but it does mean that  $P$  can tilt the odds in its favor. The customized strategy that makes this possible as the unique equilibrium outcome is formally characterized next.

*Formal characterization* Under a customized strategy, all voters who receive promises from  $P$  get the same differential utility of voting for  $P$ . I formally express this by making their utilities equal to the same constant denoted by  $C$ ; that is,  $V(\pi) - r + L(\pi) = C$  for all  $\pi \in [0, \bar{x}]$ ,  $\bar{x} \leq 1$ . The first term on the left-hand side represents the voter's reservation value of voting for  $P$ , the second term represents  $R$ 's promise, and the third term represents  $P$ 's promise. In other words,  $P$ 's strategy

is to promise transfers that ‘level’ the payoffs for all voters that receive a promise. Note also that to make the problem tractable I impose the following assumption:  $\bar{x} \leq 1$ . This means that  $P$  never makes promises to the voters in the extreme of the distribution most favorable to it ( $\pi = 1$ ), as not even the worst shock can make these voters defect from voting for  $P$ . While this assumption simplifies parties’ costs estimation in the next section, it makes sense empirically, as there are always hard-core supporters that prefer to vote for the party machine even in the event of the worst possible shock. Alternatively, this assumption can be captured with the following expression that I use later in Section 5:  $k - B + b - u > 0$ , where  $k$  multiplied by 1 represents  $P$ ’s most favorable voter’s ideological payoff of voting for  $P$  ( $\pi = 1$ ),  $B$  the maximum feasible transfer that  $R$  can promise, and  $-u$  the worst possible shock against Party  $P$ . In order to characterize a customized strategy, I need then to specify  $\bar{x}$  and  $L(\pi)$  for every  $\pi \in [0, \bar{x}]$ .

The differential utility for voting for  $P$ , after promises have been made, is the same for the median voter  $\pi = 0$ , for the cut-point voter ( $\bar{x}$ ), and for all the voters ( $\pi$ ) in between (note that these are the only voters who received a promise from  $P$  and have a ‘leveled’ differential utility). This allows us to derive both  $\bar{x}$  and  $L(\pi)$  for every  $\pi \in [0, \bar{x}]$ . Given that  $V(\pi) - r + L(\pi) = C$ , it must be the case that  $V(0) - r + \lambda = C$ , where  $V(0)$  is the median voter’s ( $\pi = 0$ ) reservation value, and  $\lambda$  is what  $P$  transfers to the median voter with a customized strategy; ( $L(0) = \lambda$ ). Then, given that  $V(\pi) = k\pi + b$ , it is the case that  $b - r + \lambda = C$ , and consequently,  $b - r + \lambda = V(\pi) - r + L(\pi)$ . By algebra it easy to determine that  $L(\pi) = \lambda - k\pi$ . Now given that by definition  $L(\bar{x}) = 0$ , it must be the case that  $0 = \lambda - k\bar{x}$ . Therefore,  $\bar{x} = \lambda/k$ .

A customized strategy can then be formally defined as follows

$$L(\pi) = \begin{cases} 0 & \text{for } \pi < 0 \\ \lambda - k\pi & \text{for } \pi \in [0, \min(1, \lambda/k)] \\ 0 & \text{for } \pi : \lambda/k < \pi \leq 1 \end{cases} \tag{1}$$

*except possibly for a measure zero set of voters.*

With  $L(\pi)$  and  $\bar{x}$  defined as before, the problem of party  $P$  is reduced to that of choosing the amount  $\lambda$  promised to the median voter. Once that decision is made, the probability of winning and the decision of which other voters to buy to the right of the median and at which ‘price’ are automatically determined.

*Heuristic proof* This subsection demonstrates that, given  $r$ , for every non-customized strategy for  $P$  there will always be a customized strategy that delivers a higher payoff. This will reduce the search for  $P$ ’s equilibrium strategy to the set of customized strategies. This considerably simplifies Party  $P$ ’s maximization problem, as it reduces it to simply finding the optimal transfer to the median voter,  $L(0) = \lambda^*$ .

**Proposition 1.** For any non-customized strategy  $h(\pi)$  there is always a customized strategy  $L(\pi)$  that strictly dominates it. Formally,  $U_P(L(\pi), r) > U_P(h(\pi), r)$ .

I sketch here the proof of the proposition (full details available in Supporting Information (SI)). Assume that instead of implementing a customized strategy,  $P$

makes promises according to a non-customized strategy  $h(\pi)$ . Given  $r$  and  $h(\pi)$ , there will always be a minimal shock  $\delta'$  for which  $P$  wins. Let  $\delta'$  be defined by  $\delta' = \min\{\delta : \Delta_P(h(\pi), r) \geq \frac{1}{2}\}$ . Let  $h'_{\delta'}(\pi)$  denote any arbitrary non-customized strategy that wins for  $\delta \geq \delta'$ . That is, if  $P$  chooses a strategy  $h'_{\delta'}(\pi)$  it wins if  $\delta \geq \delta'$  and loses otherwise.

Note now that for any arbitrary non-customized strategy  $h'_{\delta'}(\pi)$ ,  $P$  can always construct a customized strategy  $L'_{\delta'}(\pi)$  that wins with the same probability (that is for shocks greater than or equal to  $\delta'$ ), by making an offer that leaves the median voter and all the voters to the right of the median (that receive a promise) indifferent between  $P$  and  $R$  for a shock  $\delta'$ . This customized strategy  $L'_{\delta'}(\pi)$  belongs to the class of voter-customized strategies:

$$L'_{\delta'}(\pi) = \begin{cases} 0 & \text{for } \pi < 0 \\ \lambda' - k\pi & \text{for } \pi \in [0, \min(1, \lambda'/k)] \\ 0 & \text{for } \pi : \lambda'/k < \pi \leq 1 \end{cases}$$

*except possibly for a set of measure zero, and where  $\lambda'$  is  $P$ 's transfer to the median voter.*

Note that the transfer  $\lambda'$  to the median voter can be determined by exploiting the fact that  $\delta'$  leaves the median voter ( $\pi = 0$ ) indifferent between  $P$  and  $R$ . Since under  $L'_{\delta'}(\pi)$  the median voter is indifferent when  $\delta = \delta'$ , it follows that  $k \cdot 0 + b + \lambda' - r + \delta' = 0$ . This leaves  $\lambda' = r - b - \delta'$ . With  $\lambda'$  defined, this also defines what  $P$  transfers to every voter  $\pi$  under  $L'_{\delta'}(\pi)$ . Therefore, we have now a customized strategy  $L'_{\delta'}(\pi)$  that wins and loses exactly when any arbitrary non-customized strategy  $h'_{\delta'}(\pi)$  does. This customized strategy strictly dominates the non-customized strategy if it turns out be less expensive than the latter, as shown next.

The non-customized strategy  $h'_{\delta'}(\pi)$  is non-customized for one of two reasons: (1) it pays to some voters to the right of the median more than the customized strategy  $L'_{\delta'}(\pi)$  does; and/or (2) it buys off voters to the left of the median.

In the first case, clearly the non-customized strategy is more expensive. Figure 3 shows an example of this first case in which  $P$  transfers with a non-customized strategy—denoted now by  $\hat{h}_{\delta'}(\pi)$ —to some voters to the right of the median more than specified by the customized strategy. Note that the customized strategy  $L'_{\delta'}(\pi)$  in Figure 3 leaves all voters  $\pi \in [0, \bar{x}]$  indifferent, and the cost for  $P$  is just the triangle area  $A$ , while the non-customized strategy  $\hat{h}_{\delta'}(\pi)$  implies costs not only for the size of the triangle area  $A$ , but also for the size of the bumped area  $E$ . Clearly, with a strategy  $\hat{h}_{\delta'}(\pi)$ ,  $P$  wastes money by transferring more than  $L'_{\delta'}(\pi)$  to some voters  $\pi \in [0, \bar{x}]$ , without increasing its probability of winning. The probability is the same for both strategies; it is the probability that a shock  $\delta \geq \delta'$  takes place. Therefore, for this first case it has to be that  $U_P(L'_{\delta'}(\pi), r) > U_P(\hat{h}_{\delta'}(\pi), r)$ .

In the second case,  $P$  buys voters to the left of the median with some strategy  $\bar{h}_{\delta'}(\pi)$ . There are two possibilities in this case. It can be that besides buying voters to the left of the median,  $P$  secures also the vote of all voters to the right of the median or it can be that  $P$  is not buying all voters to the right of the median. If all voters to the right of the median are voting for  $P$  for a shock  $\delta'$ , then clearly  $P$  is

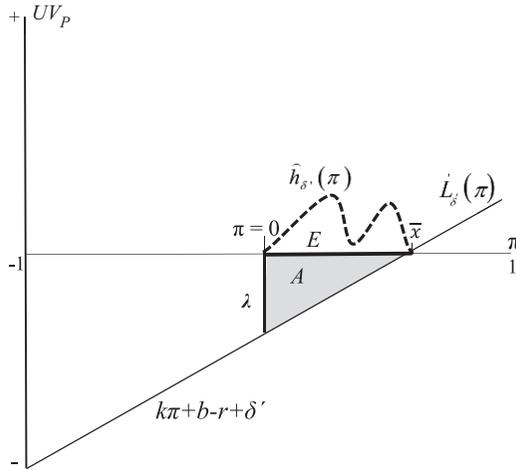


Figure 3. Strategies  $\hat{h}_{\delta'}(\pi)$  and  $L'_{\delta'}(\pi)$  for a shock  $\delta'$ .

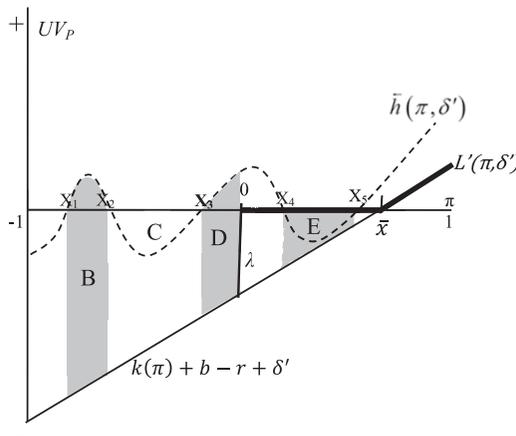


Figure 4.  $P$  buys voters to the left of the median.

wasting money by transferring to voters to the left of the median and buying more voters than it needs to win the election. If  $P$  is not buying some voters to the right of the median, it would be cheaper to do so instead of buying voters to the left of median. Figure 4 illustrates this last scenario and shows that for any arbitrary non-customized strategy  $\hat{h}_{\delta'}(\pi)$  that buys voters to the left of the median,  $P$  can construct a customized strategy  $L'_{\delta'}(\pi)$  that wins with the same probability (that is, for shocks equal or bigger than  $\delta'$ ) at lower cost, which means that  $L'_{\delta'}(\pi)$  delivers a strictly higher payoff to  $P$  than  $\hat{h}_{\delta'}(\pi)$ .

In the example of Figure 4,  $P$  buys voters to the left of the median with a strategy  $\bar{h}_{\delta'}(\pi)$  and the shock is the minimal,  $\delta'$ , for which  $P$  wins. Note that the

segment  $[x_1, x_2]$  and the segment  $[x_3, 0]$  of voters to the left of the median vote for  $P$ , and the size of the sum of these two segments needs to be at least equal to the length of the segment  $[x_4, x_5]$ —the segment of voters to the right of the median not voting for  $P$  when  $\delta = \delta'$ . If that were not the case  $P$  would not be winning for a shock equal to  $\delta'$ . To win for a shock  $\delta'$  with  $\bar{h}_{\delta'}(\pi)$ ,  $P$  needs to spend an amount equal to the area of  $B$  plus  $D$ . Since the length of segment  $[x_1, x_2]$  plus the length of segment  $[x_3, 0]$  needs to be at least equal to the length of segment  $[x_4, x_5]$ , the shaded area of  $B$  plus  $D$  is necessarily bigger than the shaded area  $E$ . This is because voters to the left of the median are ideologically further away from  $P$  and, therefore, are more expensive for  $P$  to buy. This shows that in order to maintain the same probability of winning, Party  $P$  spends more with a non-customized strategy than with the customized strategy  $L'_{\delta'}(\pi)$ . It follows that for any arbitrary non-customized strategy, which includes those that level utility to the left of the median voter, there is a customized strategy  $L'_{\delta'}(\pi)$  that dominates it (Formal Proof available in SI).

### 4.4. Equilibria

Finding the equilibria of the game involves first finding each party’s strategy that maximizes its utility given the other party’s strategy. In order to solve parties’ maximization problem I calculate each party’s probabilities of winning and the associated costs. I find first  $P$ ’s probability of winning, that is,  $\Pr[\Delta_P(\lambda, r) \geq \frac{1}{2}]$

For the reasons given in Section 4.3, if the median voter ( $\pi = 0$ ) votes for  $P$ , all the voters to the right do. Thus, the probability that  $P$  wins is equal to the probability that  $\pi = 0$  votes for  $P$ , given by the probability that  $b - r + \lambda + \delta > 0$ . Therefore,  $P$  wins for any  $\delta$  such that  $\delta > r - b - \lambda$ . Given that  $\delta$  is uniformly distributed over  $[u, -u]$ , this probability is equal to  $(u - (r - b - \lambda))/2u$ . It follows that the probability that  $R$  wins is  $(u + r - b - \lambda)/2u$ .

I now calculate the costs for parties  $P$  and  $R$ . As established earlier,  $P$  will adopt a customized strategy that pays  $\lambda$  to the median voter and then decreasing amounts— $\lambda - k\pi$ —to voters to the right of the median ( $\pi = 0$ ) up to the cut point voter  $\bar{x}$  given by  $\bar{x} = \lambda/k$  (remember that it is given that  $\bar{x} \leq 1$ ). Therefore, the total cost of  $P$ ’s customized strategy is given by

$$\int_0^{\min[\lambda/k, 1]} (\lambda - k\pi) d\pi / 2$$

Solving this integral yields a total cost for  $P$  of  $\lambda^2/4k$  for  $\lambda/k \in [0, 1]$ . The costs for  $R$  are easier to calculate, as this party transfers the same amount to every voter. Formally:  $\int_{-1}^1 r d\pi / 2 = r$ .

With these preliminaries in place it is possible now to formally solve each party’s maximization problem and find, therefore, their respective best responses. As mentioned above, each party maximizes its expected utility from accessing power minus the costs of transfers. Thus,  $P$  maximizes

$$U_P(\lambda, r) = \left( B - \frac{\lambda^2}{4k} \right) \frac{u - r + b + \lambda}{2u}$$

and the first-order condition is given by

$$\frac{3\lambda^2}{2} + \lambda(u - r + b) - 2Bk = 0 \tag{2}$$

Solving this expression for  $\lambda$  determines  $P$ 's best reply; as characterized by equation (1). Similarly,  $R$  maximizes

$$U_R(\lambda, r) = (B - r) \frac{u + r - b - \lambda}{2u}$$

The first order condition for this problem yields  $R$ 's best reply,  $r = (-u + B + b + \lambda)/2$ . To find the equilibria of the game, I now substitute  $R$ 's best reply into  $P$ 's best reply,  $-2\lambda^2 - \lambda(3u + b - B) + 4Bk = 0$ . Solving for  $\lambda$

$$\lambda^* = \frac{B - b - 3u + \sqrt{(B - b - 3u)^2 + 32kB}}{4} \tag{3}$$

Note that I can disregard the negative square solution as it would yield a negative  $\lambda^*$ , that is, a negative transfer for the median voter,  $\pi = 0$ , which is ruled out by assumption. This implies uniqueness of equilibrium (see SI for proof). Replacing  $\lambda^*$  in  $r$  yields

$$r^* = \frac{5B + 3b - 7u + \sqrt{(B - b - 3u)^2 + 32kB}}{8} \tag{4}$$

**Equilibrium:** The unique equilibrium is given by equation (4) and  $P$ 's customized strategy

$$L(\pi) = \begin{cases} 0 & \text{for } \pi < 0 \\ \lambda^* - k\pi & \text{for } \pi \in [0, \min(1, \lambda^*/k)] \\ 0 & \text{for } \pi : \lambda^*/k < \pi \leq 1 \end{cases}$$

except possibly for a set of voters measure zero and where  $\lambda^*$  is defined by equation (3).

By replacing  $\lambda^*$  and  $r^*$  in  $U_P(\lambda, r)$ , and in  $U_R(\lambda, r)$ , I get the following utilities, respectively, in equilibrium:

$$U_P^*(\lambda^*, r^*) = \left( \frac{B - \left( B - b - 3u + \sqrt{(B - b - 3u)^2 + 32kB} \right)^2}{64k} \right) \left( \frac{9u + 3b - 3B + \sqrt{(B - b - 3u)^2 + 32kB}}{16u} \right) \tag{5}$$

$$U_R^*(\lambda^*, r^*) = \left( \frac{B - \left( 5B + 3b - 7u + \sqrt{(B - b - 3u)^2 + 32kB} \right)^2}{8} \right) \left( \frac{7u - 3b + 3B + \sqrt{(B - b - 3u)^2 + 32kB}}{16u} \right) \tag{6}$$

I next discuss the main implications of the model for the chances of the party with access to better information to win and for the important outstanding question of whether it buys core or swing voters.

### 5. Private information and electoral outcomes

I prove and discuss here an important finding of this paper: For a given budget the clientelistic party with private information about voters’ reservation values is more likely to win elections than the party without such information.

Proposition 2. Party machine *P* wins elections more often than its rival *R*.

Proof. The probability that *P* wins is given by  $\left( 9u + 3b - 3B + \sqrt{(B - b - 3u)^2 + 32kB} \right) / 16u$ . Then the probability that *P* wins

is bigger than  $\frac{1}{2}$  when  $u + 3b - 3B + \sqrt{(B - b - 3u)^2 + 32kB} \geq 0$  (equation 5).

Note that this expression is increasing in *k*, so it holds for sure if it holds for the smallest possible *k*, which is  $k = \lambda^*$  (recall that  $\lambda^* / k \leq 1$ ). I proceed to prove that even when setting *k* equal to the smallest possible value,  $k = \lambda^*$ , *P* wins with greater probability than *R*. By equation (3),  $k = \lambda^*$  implies that  $k = \left( B - b - 3u + \sqrt{(B - b - 3u)^2 + 32kB} \right) / 4$ . By algebra it follows that

$\sqrt{(B - b - 3u)^2 + 32kB} = 4k - B + b + 3u$ . The right-hand side of this expression can be replaced in equation (5) to obtain  $u + 3b - 3B + (4k - B + b + 3u) \geq 0$ . Therefore *P* wins with greater probability than *R* if  $k - B + b + u \geq 0$ . Note that the more demanding condition  $k - B + b - u \geq 0$  was already established. Therefore, given that it is always true that  $k - B + b - u \geq 0$ , then  $k - B + b + u \geq 0$  also has to be true, and *P* always wins with a greater probability than *R*. ■

The intuition behind the proof is rather simple. By resorting to a customized strategy party machines can electorally exploit their informational advantage by tailoring rewards to voters’ reservation values. By paying voters the minimum needed to ensure their votes, party machines buy votes more efficiently and win elections more often than their rivals. Information means greater efficiency for brokers buying votes. A broker clearly exemplified this: ‘I can get the same amount of votes as any other party representative but with half of the resources, because I know which

families have more children and what they need.<sup>17</sup> A councilman interviewed by Nichter in Brazil nicely illustrates a broker's customized strategy saying: 'he [the broker] arrives there the day before Election Day, pays a twenty reals bill, a ten reals bill...depending on the value of the voter...There you have one for ten, one for twenty, you have one for fifty...it will depend on the resistance of the voter.'<sup>18</sup>

In the model of this paper, information asymmetries translate into higher probabilities of electoral victory for the better-informed party. The electoral hegemony of the party with better information, the party machine, has in fact been observed in many countries for long periods of time, as in the cases of the PRI in Mexico, the Daley machine in Chicago, and the KMT in Taiwan, among others. It is not surprising that, after Argentina's return to democracy in 1983, the PJ won five out of seven Presidential elections and 207 out of 247 (84%) mayoral elections in the Conurbano Bonaerense. This electoral dominance is explained well by the probabilistic model in the context of asymmetric information.

## 6. 'Core' versus 'swing' voter

The model also addresses the much discussed question of whether machines target core, swing, or opposition voters. It shows the conditions under which party machines target their own partisans.

Proposition 3. For any  $b \geq 0$  party machines target only conditional supporters, and for any  $b$  such that  $\frac{1}{6}(-B - \sqrt{24Bk + (B - 3u)^2} + 3u) < b < 0$  party machines target more conditional supporter voters than conditional opposed voters.

Proof. Remember that the party machine  $P$  only targets within the half of the distribution of voters closer to it; i.e.,  $P$  transfers to voters  $\pi \geq 0$ . Therefore,  $P$  only makes transfers to conditional supporters voters when  $b \geq 0$ ; that is, to voters that are inclined to support  $P$  prior to any shock and transfers. When  $b < 0$ ,  $P$  has to make transfers to conditionally opposed voters to assure half of the votes. If, however,  $b$  is sufficiently large,  $P$  will target more conditional supporters than conditional opponents. To find the threshold  $\underline{b} < 0$  for which this is true, observe that the median voter  $\pi(0)$  votes for  $R$  prior to any transfers or shock when  $b < 0$ . In this case the indifferent voter  $\pi(i)$  is given by  $k\pi(i) + b = 0$  or  $\pi(i) = -b/k$ . Note that given  $b < 0$  it is always true that  $\pi(i) > 0$ . Therefore, for  $b < 0$ ,  $P$  targets conditional supporters between  $\pi(i) = -b/k$  and the cut-point voter  $\pi(\bar{x}) = \lambda/k$ , and opposed voters between  $\pi(0)$  and  $\pi(i) = -b/k$ . These segments are equal at the threshold  $\underline{b}$ . Using equation (3) and solving  $(B - b - 3u + \sqrt{(B - b - 3u)^2 + 32kB})/(4k) - (-b/k) = -b/k$  for  $b$  yields  $\underline{b} = \frac{1}{6}(-B \pm \sqrt{24Bk(B - 3u)^2 + 3u})$ .<sup>19</sup> Therefore, for any  $b > \underline{b}$ , where  $\underline{b} = \frac{1}{6}(-B - \sqrt{24Bk(B - 3u)^2 + 3u})$ ,  $P$  targets more conditional supporters than conditional opposed voters. ■

What incentives do party machines have to target supporters? One inevitable condition of electoral politics is uncertainty. Politicians and parties run campaigns

in circumstances in which many factors are beyond their control. This probabilistic model captures this uncertainty and shows that party machines target voters already inclined to vote for them to prevent defections. The probabilistic model makes the voters' choice of party more relative by introducing a shock that may affect this choice after parties have promised transfers. The shock  $\delta$  can turn the electoral result in favor of or against the party machine. If a shock  $\delta < 0$ —i.e. a shock against the party machine—takes place, voters that were previously inclined to vote for the political machine might vote against it. As stated by the brokers interviewed, party machines 'assure' their followers' votes with rewards.

It may be misleading, then, to use the term 'core voters' in this context, as deterministic models do (Nichter, 2008; Stokes, 2005), to describe voters that support the party machine's ex ante transfers. Because voters can change their party allegiance in this probabilistic setting, I call such voters 'conditional supporters.' They are conditional supporters because they will vote for the party machine as long as transfers from the opposition party and the shock do not prompt them to do otherwise. Party machines know that their conditional supporters are not 'diehards.' By transferring to conditional supporters, they shield their base of support, thus making it hard for challengers to defeat them. Because of this, conditional supporters that receive a transfer from the party machine are defined here as 'shielded supporters.' An interesting feature of this model is that once the party machine shields its base of support with transfers, the swing voter ceases to exist; that is, there are no longer any indifferent voters.

The PJ in the Conurbano Bonaerense is a good example of a party machine with a distribution of voters skewed in its favor that, consequently, builds an electoral coalition of shielded supporters by sending brokers to distribute goods to conditional supporters. However, party machines do not always target conditional supporters. When the distribution of voters is skewed in the opposite direction—i.e.  $b < 0$ , conditional supporters are not enough to win an election, and clientelistic parties also need to transfer to 'conditional opposed voters' to maximize their utility. For  $b < 0$  party machines need to target conditional opposed voters as well to improve their chances of winning elections. Therefore, the type of voter party machines decide to target depends ultimately on the distribution of voters.

## 7. Conclusion

Two important findings have emerged from the approach to clientelistic voting adopted in this paper. First, it has shown how party machines exploit their informational advantage. The model reveals the rationale behind party machines' use of information to allocate resources to voters. A party machine's optimal strategy in the particular environment of asymmetric information is a voter-customized strategy. The key element in the equilibrium is that the better-informed party uses this strategy to tailor transfers according to each voter's reservation value, thus increasing its chances of winning while maximizing its utility. The customized strategy determines not only which voters receive transfers but also the size of the transfers. It predicts that party machines transfer the biggest reward to the median voter and then linearly decreasing amounts to conditional voters, as their loyalty to the party

increases. The model has demonstrated that this strategy allows the best informed party to win elections more often than other parties. The model allows us to better understand the relevance of private information about voters for the persistent electoral hegemony of party machines around the world.

Second, it provides a new perspective on the question of why clientelistic parties often target their own partisans with discretionary transfers. Against the contention that parties do not need to target their own partisans because the latter already favor them, the model shows that party machines target their conditional supporters to assure their votes in the face of events beyond their control. Uncertainty prompts party machines to shield their base of electoral support. However, this model argues that the type of voter that party machines decide to target depends ultimately on the distribution of voters.

To simplify the analysis the model assumes that one party has perfect information about voters' preferences while the other has no information at all. In a future extension this assumption could be relaxed, allowing the less informed party to observe with some noise voters' ideal points. While the better informed party  $P$  can exactly observe voter's ideal point  $\pi$ , the other party  $R$  would believe that the voter's ideal point is  $\pi + \varepsilon$  where  $\varepsilon$  is drawn from a symmetric distribution with mean zero and variance  $v_R$ . A very natural conjecture is that in this environment,  $P$  would still be able to exploit its informational advantage and win elections more often than  $R$ . Finally, for future research a comparative analysis collecting data on the type of voters that party machines target across countries would be a major contribution to the existing literature.

## Data appendix

I carried out the field work for this particular paper between 2009 and 2010 in four municipalities of the Conurbano Bonaerense (CB). The previous literature attests that the PJ machine has its stronghold in the CB (Levitsky, 2003). The four selected municipalities, La Matanza, Malvinas Argentinas, Merlo, and San Miguel, are important electoral districts which display characteristics typical of the CB, which consists mainly of poor industrial suburbs populated by working-class and unemployed people. La Matanza alone, with 834,000 voters, has a larger electorate than 17 of the 24 Argentine provinces. The four municipalities lie near the median of the CB in socioeconomic terms. Although a random sample of brokers was logistically impossible, I was able to interview a large number of them with a low rate of refusal (eight). The brokers were selected with a snowball technique. I was able to interview first the universe of brokers of a particular slum (seven brokers) that I knew well, and then asked them if they knew brokers similar to themselves in their own and in the other three municipalities. I asked brokers about their geographic area of influence; with this information I was able to assemble maps locating brokers. For some areas and localities, especially in La Matanza, which is the CB's largest municipality, brokers did not provide me with any contacts. In these localities, I recruited new seeds of snowballing. In this way I was able to interview brokers from all major areas and localities. To confirm the political dynamics described by brokers, I also

interviewed party leaders and executive officials, including three former governors of the Province of Buenos Aires, five CB mayors, and twelve municipal directors and secretaries. The dynamics found in the urban Peronist machine in these four municipalities of the CB were confirmed for the provinces in interviews I carried out with twelve party leaders, four mayors, and three governors from other municipalities and provinces. I also interviewed six former ministers and five directors of different areas of welfare programs at the national level.

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## Notes

1. Interview by the author. Buenos Aires City, 26 July 2012.
2. Interview by the author with a PJ broker. Buenos Aires Province, 2 August 2009.
3. Question asked: Do you know each of your followers' most urgent need?
4. Interview by the author with a PJ broker. Buenos Aires Province, 11 December 2010.
5. Question asked: Do you know which party your followers prefer?
6. Interview by the author with a PJ broker. Buenos Aires Province, 21 October 2010.
7. Interview by the author with a PJ broker. Buenos Aires Province, 1 October 2010.
8. Interview by the author with a PJ broker. Buenos Aires Province, 1 November 2010.
9. Interview by the author with a PJ broker. Buenos Aires Province, 19 July 2009.
10. Interview by the author with a PJ broker. Province of Buenos Aires, 2 August 2009.
11. Interview by the author with a PJ broker. Province of Buenos Aires, 1 November 2010.
12. While I do not deny that in some contexts political machines compete with one another (Nichter and Peress, 2013), I model here, as do previous formal works, the common situation where one party has the monopoly over the networks of brokers (Nichter, 2008; Stokes, 2005).
13. Sincere voting means here that voters get offers from  $P$  and  $R$  and simply vote for the offer that yields them a better payoff, assuming that it is what they will get.
14. In order to simplify, we assume as a tie break rule that  $P$  wins in the case that exactly half of the voters vote for it.
15. Interview by the author with a PJ broker. Province of Buenos Aires, 1 November 2010.
16. While parties make promises simultaneously, for the purpose of clarity I present them here as making promises sequentially.
17. Interview by the author with a PJ broker. Buenos Aires Province, 21 October 2010.
18. Interview by Simeon Nichter with a councilor from Bahia, Brazil, on 24 November 2008. The author thanks Nichter for the use of this unpublished quotation.
19. Note that we can dismiss the positive square root solution as it requires, for  $b < 0$ , that  $k < 0$ , which is not possible by assumption. The expression  $\frac{1}{6}(-B - \sqrt{24Bk(B - 3u)^2 + 3u})$  is increasing in  $k$ , and solving  $\frac{1}{6}(-B -$

$\sqrt{24Bk(B-3u)^2 + 3u} = 0$  for  $k$  yields  $k = 0$ , which means that  $b = 0$  requires  $k = 0$ . Therefore, for  $b < 0$  necessarily  $k < 0$  which is ruled out by assumption.

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