Electoral Intermediaries

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Abstract

Democratic elections increasingly involve political intermediaries (e.g. grassroots organizations or political brokers). We develop a model of electoral competition in which candidates must decide between brokers (patronage) and grassroots organizations. Our model shows that patronage is more likely when public offices are relatively more "valuable" for brokers. Moreover, setups that constrain candidates from funding grassroots campaigns and weaken ties between politicians and citizens make patronage more likely. We show that patronage negatively affects citizens' welfare, as winning brokers turned civil servants undermine the quality of governments. Finally, our model explores the role of policy deliberation in curbing patronage politics.

1. Introduction

A salient feature of contemporary electoral campaigns is the difficulty of establishing a dyadic interaction between candidates and voters. This fact is especially true in national elections and urban settings in which direct and sustained contacts between voters and candidates are nearly impossible. Consequently, politicians often rely on different sorts of intermediaries which represent a bridge to their constituency. Two alternative strategies stand out in this process. On one hand, candidates may use grassroots organizations, composed of groups of local activists or foot soldiers, to invest their efforts in order to mobilize voters during the campaign. On the other hand, they could delegate electoral activities to political brokers, who, in turn, may dispose resources, including money, time, and connections to manage the campaign at a local level.

However, standard models of electoral competition have not explicitly integrated intermediaries as key players in voter mobilization. In line of the median voter models (Hotelling, 1929; Downs, 1957), probabilistic voting (Calvert, 1985; Lindbeck and Weibull, 1987), the citizen-candidate framework (Osborne and Slivinsky, 1996; Besley and Coate, 1997), or agency models (Banks and Sundaram, 1998), among other approaches, they assume direct interaction between citizens and candidates, or at least do not explicitly model intermediaries as key players connecting voters and candidates.

Moreover, existing models frequently assume that parties (or candidates) mainly compete in some type of policy space, positioning themselves on issues that matter for voters, which, in turn, determines their decisions. Hence, under traditional approaches, competition is mainly spatial. However, other forms of competition are increasingly relevant in contemporary politics: Campaign organizations frequently compete in campaign investment spaces (e.g. effort and resources). Shachar and Nalebuff (1997) propose a model in which political leaders expend efforts in order to increase their odds of winning. In the model, players' investment levels depend on specific features of the election, such as the expected turnout or the closeness of the result. An important extension would include effort exerted or investments made by electoral intermediaries.

As one should expect, electoral competition through intermediaries has important implications for quality of governance and citizens' welfare. We argue that when economic and political incentives encourage broker-mediated campaigns, as opposed to grassroot campaigns,

delegation leads to patronage—the appointment of political allies to important public positions, which, in turn, may have serious implications in terms of quality of the bureaucracy and public service delivery. Patronage is a particular manifestation of clientelism, which has been recognized as serious threats to public service delivery, income redistribution, and political accountability (Wantchekon, 2003; Gallego, 2015). It has been documented that clientelism tends to decline as countries develop (Cox, 1987; Mitgang, 2000; Lizzeri and Persico, 2001; Kitschelt and Wilkinson, 2007; Camp, Dixit, and Stokes, 2014), but the phenomenon may persist in different contexts, even in developed countries (Hollibaugh, 2015; Bardhan and Mookerjee, 2017*a*).

Clientelism can result in over-employment in the public sector and under-investment in activities that increase productivity in the private sector (Robinson and Verdier, 2013), under-provision of public goods (Keefer and Vlaciu, 2008; Bardhan and Mookerjee, 2012; Sarkar, 2014; Khemani, 2015), and reluctance of incumbents to reduce the size of the informal sector (Bardhan and Mookerjee, 2017*b*). Xu (2018) documents how appointed bureaucrats during the British Empire raised less revenues from their constituency, while in the context of Brazil, Colonnelli, Teso, and Prem (2019) find that patronage is linked to lower levels of quality of public servants. Despite these important advances into the empirics of patronage, there has been limited theoretical investigation of its connections to electoral competition, particularly to campaign strategies.

In this paper, we develop a model of electoral competition in which intermediaries play a crucial role in linking politicians and citizens. The model considers that candidates to public office have to decide between two forms of conducting an electoral campaign: they can either rely on grassroots organizations, in which agents (e.g. local activists) campaign for them and receive performance-based wage; or they can base their campaign on patronage, whereby brokers are enlisted to act as intermediaries in exchange of a potential appointment to a government position in case of victory. The candidates' main tradeoffs between the two campaign strategies rest on the fact that while brokers have a better capacity to monitor agents than candidates do, and consequently extract higher levels of effort from them, it is not necessarily the case that brokers' and candidates' incentives to spend resources are completely aligned.

The model shows under what conditions candidates will prefer to use a patronage-based strategy as opposed to a grassroots strategy. Five insights are derived from our theoretical analysis: First, when public offices are more "valuable" to the brokers, candidates have higher

incentives to hire brokers. This result is important as it reveals that institutions and state capacity matter and that in contexts in which corruption and prebendalism are more likely, public offices may be relatively more attractive and brokers work harder to get the candidate elected. This result helps us understand the prevalence of corruption in clientelistic systems[1] (de la O, 2013; Bussell, 2018; Brierley, 2019). Second, whenever candidates face lower levels of grassroots capacity, in the sense that they have relatively fewer resources to run a clean campaign, incentives to hire brokers are higher. This result establishes a direct connection between electoral rules on campaign financing and clientelism (Samuels, 2002). In particular, it suggests that pieces of legislation aimed at limiting campaign expenses may have the unintended effect of increasing patronage incentives as brokers might self-finance part of the campaign, in return for rents from public office. It also suggests that the proliferation of crowdfunding strategies may reduce the incentives to hire brokers during a campaign (Aaker and Chang, 2010).

Third, the model predicts that when the candidates have low capacity to monitor and manage grassroots operations, they have a greater incentive to hire brokers. This result is quite intuitive: in contexts in which it is harder for candidates to monitor the behavior of agents, perhaps as a consequence of urbanization or electoral rules such as the secrecy of the ballot, intermediaries become more important and decisive (Leon and Wantchekon, 2019). Our fourth result concerns the relationship between patronage, the quality of public servants, and citizens' welfare (Colonnelli, Teso, and Prem, 2019; Xu, 2018). Our model shows that patronage may harm the quality of governance and public service delivery, but these effects may be curbed by strong institutions and higher levels of state capacity. Finally, our theory provides explanations to several empirical regularities associated to patronage. First, incumbents tend to rely on this strategy more often than challengers (Fujiwara and Wantchekon, 2014), as it is easier for the former to hide this form of campaign. Second, policy deliberation and information transmission strategies, such as town hall meetings and debates, may be effective methods to overcome clientelism (Wantchekon et al., 2018), as deliberation among voters allows information diffusion and weakens the incentives of candidates to rely on brokers. Finally, career concerns on the part of the brokers may curb malfeasance in the presence of patronage, as appointed bureaucrats may want to preserve their reputation and avoid scandals.

[1]Note that we use the term "clientelistic system", as opposed to "clientelistic relationship". The reason is that in contrast with some traditional theories (Stokes, 2005; Nichter, 2008), we do not view clientelism as a dyadic relation between patrons and voters. We underscore the importance of other actors, such as brokers.

This paper makes an important contribution to the literature on electoral competition, clientelism, and bureaucratic performance for three clear reasons. First, we present an integrated model of electoral competition that underscores the role of all relevant actors. In particular, we show that intermediaries matter not only because they solve information asymmetries, but also because they may be rewarded through bureaucratic positions. Second, our theory shows that clientelism and patronage have important welfare implications not only because policy gets distorted, but also because appointed bureaucrats that result from a patronage-based system tend to have lower levels of competency and higher incentives to be corrupt. Finally, we provide a theoretical explanation of why certain strategies, such as debates, town hall meetings, and other forms of information provision and deliberation can help societies overcome patronage-mediated clientelistic practices in line with recent experimental evidence on this front (Bowles and Larreguy, 2019; Bidwell, Casey, and Glennester, forthcoming; Fujiwara and Wantchekon, 2014; Wantchekon et al., 2018). Our theory supports the claim that deliberation and information provision may result in savvy voters that value competent bureaucrats, thus punishing candidates that rely on brokers.

The paper is composed of seven sections, including this introduction. Section 2 relates our argument to the existing literature, emphasizing how it improves our knowledge of the role of brokers and the effects that patronage has on economic and political outcomes. In section 3, we lay down a theoretical model of electoral competition by defining the strategies and payoffs of candidates, intermediaries, and voters. In section 4, we present the main results of the model, establishing the conditions under which candidates are more likely to rely on patronage instead of grassroots organizations. Section 5 describes the welfare implications of patronage, establishing the connection between broker-mediated campaigns and the quality of public servants. Section 6 provides two extensions of the model in order to explain why incumbents rely more on patronage than challengers and how town hall meetings and debates may help overcome this problem. Section 7 discusses the role of career concerns. We conclude in section 8 of the paper.

2. Relationship to the Literature

2.1. Electoral Competition, Effort, and Political Intermediaries

Models of electoral competition, in the tradition of the median voter theorem (Hotelling, 1929; Downs, 1957), probabilistic voting (Calvert, 1985; Lindbeck and Weibull, 1987), the candidate-citizen framework (Osborne and Slivinsky, 1996; Besley and Coate, 1997), or agency models (Banks and Sundaram, 1998), are often characterized by two fundamental features: first, competition between candidates or parties tends to be spatial, in the sense that politicians make promises that signal their ideological position in a political spectrum and voters compare the distance between their ideal points and such position upon making a voting decision. We complement this approach by recognizing that competition also takes place in an *effort* dimension. Shachar and Nalebuff (1997) is an interesting example of this framework; in their model, parties compete in the effort to mobilize voters. We extend their approach by incorporating intermediaries into the analysis.

Second, and in relation to the previous point, the aforementioned approaches implicitly assume that candidates can engage in face-to-face interactions with voters. This assumption sounds appropriate in small elections but seems unrealistic in the context of modern electoral contests. Caillaud and Tirole (2002) argue that parties serve as political intermediaries that regulate competition among like-minded factions. However, we claim that intermediaries are crucial beyond their ability to resolve intraparty frictions. These actors are fundamental to models of electoral competition, not only because they usually solve informational problems between candidates and voters, but also because the type of intermediary strategy chosen by politicians will have deep implications in terms of bureaucrat competency and the provision of public goods.

Our paper also has a strong connection with models of redistribution. In the case of Dixit and Londregan (1996), for instance, their model assumes that transfers advanced by politicians to different groups in the society are affected by "leaky buckets", that in the end capture the degree to which a candidate can target a particular set of voters. In their model, this is an *ad hoc* assumption, while our framework endogenizes this (in)ability of candidates to target voters. We show that leaky buckets arise when politicians hire brokers, delegate campaign activities to these agents, and extend equity in the government in exchange for their support. Moreover, our approach allows us to study solutions to reduce the "leaky bucket" problem.

2.2. Clientelism, Brokers, and Patronage

A common trait of existing theories of clientelism is that they understand the phenomenon as a *dyadic* relationship between a patron and client (Lande, 1977; Stokes, 2002, 2005; Robinson and Verdier, 2013; Gallego, 2015). These studies leave brokers aside and assume that there exist direct connections between candidates and voters. In recent years, both theoretical and empirical articles have started to study in greater detail the role played by intermediaries, disentangling the structure of clientelist networks, Keefer and Vlaciu (2008) and Baland and Robinson (2007) being interesting early accounts. We contribute to the literature that understands clientelism as a system, and not as a series of relationships. Recent theories have included brokers into their analysis (Gingerich and Medina, 2013), and show that these political intermediaries often solve informational asymmetries between candidates and voters, but face problems of adverse selection (Stokes et al., 2013), moral hazard (Larreguy, Marshall, and Querubin, 2016), or collective action (Camp, 2015).

Albeit insightful, these models do not trace a connection between broker-mediated campaigns and the quality of civil service, something crucial to the understanding of the consequences of clientelism. We aim to fill this gap with our model. Our framework is useful to advance the idea that the inefficiency is not only driven by voter preferences, but also by the distortions generated by the delegation of campaigning to brokers. It may be true that in the short run voters do not hold politicians accountable for their actions, but in the long run they should learn. In that sense, even in the presence of well-informed voters, candidates may be handcuffed by brokers after they are endowed with equity in the government.

Finally, our paper provides a theoretical framework for empirical studies that stress on the important role played by brokers, especially in developing countries (Calvo and Murillo, 2004; Brusco, Nazareno, and Stokes, 2004; Larreguy, 2013; Baldwin, 2013, 2014; Bussell, 2018; Brierley, 2019). Moreover, recent articles elucidate in which way patronage affects the quality of civil servants and public goods provision. In the context of the British Empire, Xu (2018) shows that governors appointed because of their connections are more inefficient at raising local revenues in their colonies. Similarly, in the context of Brazilian politics, Colonnelli, Teso, and Prem (2019) show that political connections matter upon explaining how public sector jobs are allocated, and that bureaucrats appointed through this channel tend to be less competent. Our model provides a theoretical framework that helps understand these empirical regularities and incorporates all relevant actors.

3. The Model

In this section, we describe the baseline setup in which we develop our model of electoral competition. Consider two candidates $i \in \{1, 2\}$ who compete in an election. The candidates can choose between running a grassroots campaign versus a broker-mediated campaign. Let σ_i denote candidate i's campaign type. The election outcome depends on Let x_1 and x_2 be the campaign efforts of candidates 1 and 2, respectively. We abstract away from some details of the process and assume that the probability that candidate i wins is described by a twice-differentiable function $\rho(x_i, x_j)$ that is symmetric in the sense that $\rho(x, y) = 1 - \rho(y, x)$.[2] In addition, we impose the following conditions:

- $\frac{\partial \rho}{\partial x_i} > 0$ and $\frac{\partial^2 \rho}{\partial x_i^2} \leq \min\{0, \frac{\partial^2 \rho}{\partial x_i \partial x_j}\}$
- $\frac{\partial \rho(x,x)}{\partial x_i}$ is decreasing in x.

An example of ρ that satisfies these properties is the popular Tullock contest function, $\frac{x_i}{x_i + x_j}$. The first condition states that the winning probability is increasing in the candidate's own campaign effort and there is decreasing marginal return to this effort. The second condition is mainly a technical assumption that ensures the existence of equilibrium, and it states that the marginal return to effort is decreasing when the other candidate exerts the same effort.

The objective of the candidates is to win the election. If a candidate chooses a grassroots campaign, he raises funds and hires a grassroots organization composed of foot soldiers. Suppose that the campaign donation network is such that the candidate can obtain a campaign fund of K dollars.[3] We refer to K as the *grassroots capacity* of a candidate.[4] The candidate uses the fund to hire foot soldiers. We assume that the effort of a foot soldier is contractible. Specifically, a contract specifies payments contingent on some observed noisy measure of the foot soldier's effort. This reflects imperfect monitoring by the principal, the candidate in this case. Let the observed performance be denoted $s \in \{h, l\}$ with $P(h|x) = x$. In other words, the probability of a high signal h is increasing in effort.[5] The wage can only be contingent

[2] We provide a micro foundation of ρ based on a probabilistic voting model in the Appendix.

[3] Among other strategies, for instance, in contemporaneous politics candidates tend to use crowdfunding tools on the internet to raise money. See, for instance, Aaker and Chang (2010).

[4] The contracts for foot soldiers we describe below are at the individual basis, and therefore it may be apt to treat the campaign fund amount on a per capita basis.

[5] The effort will be bounded away from 1 in equilibrium.

on s. Let (w_h, w_l) denote a contract which specifies the wage conditional on signals h and l, respectively. Note that the budget constraint implies the restriction $\max\{w_h, w_l\} \leq K$. The foot soldier incurs a private cost of effort, $c(x)$, which is increasing, strictly convex, with $c'(0) = 0$ and $\lim_{x\to 1} c'(x) = \infty$. Given contract (w_h, w_l), the agent maximizes his expected wage minus the cost of effort:

$$\max_x w_h x + w_l(1-x) - c(x)$$

The optimal contract for the candidate is straightforward given the agent's objective function. Specifically, it is optimal for the candidate to set $w_l = 0$ and $w_h = K$. Note that given our assumptions on $c(\cdot)$ the footsoldier's effort is bounded above by 1; this ensures that the observed performance as a noisy signal is well-defined.

If the candidate chooses to run a broker-mediated campaign, then he delegates the responsibilities of raising funds (possibly from his own pocket) and hiring foot soldiers to the broker. Unlike the candidate, the broker is able to monitor foot soldiers perfectly (i.e., the level of effort is perfectly observable to the broker).[6] Thus, in the optimal contract, the broker specifies an effort level x and a wage of $c(x)$.

In exchange for running the candidate's campaign, the broker is promised a high level position in the government, which is of value T to the broker.[7] This could be either a monetary value (because of graft, for example) or simply ego rents for office. In sum, the broker who works for candidate i has the following objective function

$$\max_x \rho(x, x_j) \cdot T - c(x)$$

In summary, once a candidate delegates the campaign to the broker, the latter acts as an agent in a contest for a "prize", by expending resources—exerting costly effort—to improve the odds of winning.

The timeline of the game is summarized below:

[6] Perfect monitoring is not essential for the results. The qualitative insights would go through so long as the broker is better at monitoring the foot soldier than the candidate.

[7] Although this type of quid-pro-quo arrangement is typically not enforceable by the court, credibility of such promises can nonetheless be obtained when candidates/politicians and brokers have long-run relationships. Stokes (2005) applies this logic in the case of vote buying.

1. The candidates decide simultaneously whether to run grassroots campaigns or broker-mediated campaigns

2. The agents of the candidates (brokers or foot soldiers) make decisions to maximize their own utility.

3. The election outcome is realized, and the winner fulfills the promise to the broker, if applicable.

We focus on pure strategy equilibria of the game.

4. Equilibrium Choice of Campaign

We now consider the candidate's choice between grassroots and broker-mediated campaigns in equilibrium. Note that in the benchmark model, the outcome depends solely on campaign efforts. The choice of campaign influences election outcome only through its effect on effort incentives. One interpretation is that the voters do not have an inherent interest in the type of campaign candidates run. We relax this assumption in the next section and explore the case where campaign choices directly influence the election outcome.

The main trade-off faced by the candidates when choosing the campaigns is between moral hazard and misaligned interest. The candidate has imperfect monitoring of foot soldiers, and therefore the provision of incentives in a grassroots campaign is limited. On the other hand, the broker, perhaps because of his organizational expertise, can better monitor the foot soldiers and is therefore more effective in incentivizing effort. This is the case for delegating to a broker. However, the broker's interest may not be completely aligned with that of the candidate despite the former having a "stake" in winning the election. Unlike the candidate, the broker internalizes the cost of hiring foot soldiers, and may not devote as much of his resources as the candidate would have liked. In general, how much of his resources a broker is willing to devote for the campaign depends on: 1) his value for the office promised by the candidate and 2) The strength of the opponent's campaign. In short, the broker's willingness to devote resources depends on the "rate of return" on this investment.

4.1. Grassroots Capacity and The Value of Office

Recall that under a grassroots campaign, the optimal contract for a foot soldier is for the candidate to pay K to him whenever the signal h is realized, and 0 otherwise. Let x^g denote the agent's effort under this optimal contract i.e., x^g satisfies $K = c'(x^g)$.

It is not difficult to show that there exists a pure strategy equilibrium and it is unique except in knife-edge cases (see Lemma A.1 in Appendix). And we obtain the following characterization of equilibrium with respect to the value of office T and grassroots capacity K.

Proposition 1. *There exists a strictly increasing function $\hat{K}(T)$, such that both candidates choose broker-mediated campaigns in equilibrium if grassroots capacity is low i.e., $K < \hat{K}(T)$, and both candidates choose grassroots campaigns in equilibrium if grassroots capacity is high, i.e., $K > \hat{K}(T)$.*

Note that the proposition also implies that fixing K, the candidates choose broker-mediated campaigns if and only if T is large. Figure 1 is an illustration of the proposition. The result is quite intuitive. Recall that even though the broker has a monitoring advantage, the willingness of broker to devote resources to the campaign is determined by the "rate of return," which depends on the value of government office to the broker i.e., T. Higher value of office makes the broker more willing to spend on the candidate's behalf. This makes the delegating to a broker a more attractive option for the candidate. In sum, in institutional settings in which brokers can extract additional rents from public positions, in such a way that the wage paid by the job is just another source of income, patronage becomes a more interesting strategy for intermediaries and candidates. This observation helps us understand why, in developing countries, corruption and clientelism tend to go together and why judicial state capacity matters. Moreover, as it has been documented in recent empirical studies (Bussell, 2018; Brierley, 2019), brokers and bureaucrats play an important role in corrupt acts.

By the same token, because the broker's willingness to pay for the campaign is limited, the candidate is willing to go with grassroots campaign if he is able to raise large resources himself i.e., K is high. One policy implication of this observation is that any legislation aimed to regulate the way in which campaigns raise and spend resources, such as public financing of political campaigns, may have deep implications in terms of patronage and clientelism

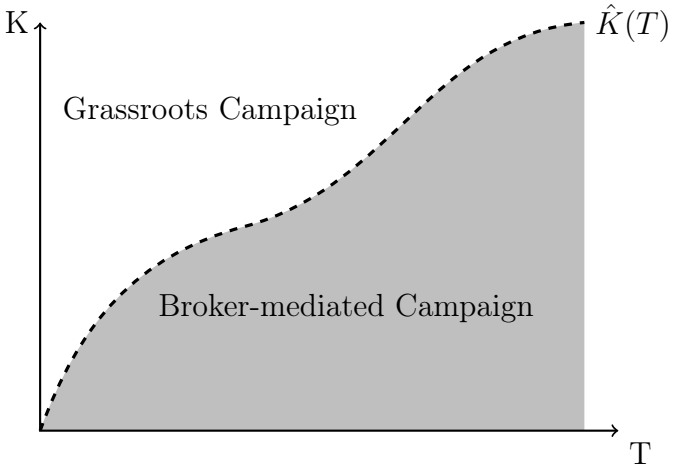

Figure 1: Equilibrium Campaign Choice

(Samuels, 2002). Highly budget-constrained candidates will rely more often on private intermediaries capable of alleviating these restrictions and, as it will become clear below, this will have implications in terms of the provision of public goods. Second, as technological improvements enable candidates to rely more on new methods for raising money, e.g. crowdfunding campaigns (Aaker and Chang, 2010), all else equal, in equilibrium, patronage should weaken, and grassroots strategies should prevail.

4.2. The Effect of Monitoring

Given the moral hazard inherent in grassroots campaigns, it is of interest to further explore the role that imperfect monitoring plays in candidates' campaign choices. To do so, we consider the following generalized signal structure that allows for comparative statics of equilibrium behavior with respect to the candidate's monitoring ability.[8] Let S_N denote the following signal structure in which the signal is drawn from a finite set $\{s_0, s_2, \ldots s_N\}$ according to the following distribution:

$$Pr(s_n|x) = \begin{cases} N \cdot (x - \frac{n-1}{N}) & \text{if } x \in [\frac{n-1}{N}, \frac{n}{N}] \\ 1 - N \cdot (x - \frac{n}{N}) & \text{if } x \in [\frac{n}{N}, \frac{n+1}{N}] \\ 0 & \text{otherwise} \end{cases}$$

[8] More precisely, the difference between the candidates' and the brokers' monitoring ability.

In other words, the signal structure corresponds to a partition of the interval $[0,1]$ with N equal size intervals.[9] If the foot soldier's effort falls within an interval $[\frac{n-1}{N}, \frac{n}{N}]$, then the candidate observes either signals s_{n-1} or s_n, with probabilities $1 - N \cdot (x - \frac{n-1}{N})$ and $N \cdot (x - \frac{n-1}{N})$ respectively.[10]

Proposition 2. *Assuming K is not too low, then there exists $\bar{N}$ such that for all $N \geq \bar{N}$, the candidates choose grassroots campaign in equilibrium under the information structure S_N.*

Intuitively, as N increases, the candidate has better monitoring of the foot soldiers. As N converges to infinity, it is as if the candidate can perfectly observe the foot soldier's effort, and the broker no longer has a monitoring advantage over the candidate. Thus, so long as grassroots capacity is not too low, the candidate is will prefer a grassroots campaign when he has sufficiently strong monitoring ability. This result suggests that as societies evolve from agrarian to urban and industrialized setups, brokers salience increases because it becomes more difficult for politicians to engage directly with citizens. Monitoring is harder in urban settings and intermediaries play a more active role because of their ability to solve the agency problems that arise (Leon and Wantchekon, 2019).

5. Campaign Strategies under Non-Robust Governance

In the benchmark model, we assumed that the nature of campaigns has an effect on election outcome only (indirectly) through its effect on campaign effort. The interpretation is that the voters do not have an intrinsic interest in the type of campaign candidates run. This may not be the case since in reality; governance is often weakened by clientelistic politics. For example, the quality of governance is undermined when politicians appoint brokers over more qualified civil servants (Colonnelli, Teso, and Prem, 2019; Xu, 2018), or when brokers who help with campaign effort in exchange for jobs in the government are likely to exploit these positions for their own gain (Brierley, 2019; van de Walle, 2007). A far-sighted voter would be aware of the potential harms to governance by clientelistic politics and therefore less inclined to vote for a candidate for running a broker-mediated campaign, all else equal. In this section, we explore campaign choices by candidates when governance is non-robust to clientelistic politics.

[9] The results would go through even if we allow for unequal intervals.

[10] The result goes through so long as the probability of observing s_n is increasing in x.

We extend the model by introducing the quality of governance. For simplicity, the quality of governance associated with a grassroots campaign is normalized to 1 and the quality of governance associated with a broker-mediated campaign is denoted by $0 \leq \psi \leq 1$. Thus, the quality of governance is not higher when the winner of the election runs a broker-mediated campaign than when he runs a grassroots campaign. Abusing the notation, we let σ_1 and σ_2 be the quality of governance associated with the campaign strategies of candidates 1 and 2, respectively. To capture the negative impact of a low quality of governance on the electoral appeal of a candidate, we assume that the winning probability for candidate i is $\rho(\sigma_i x_i, \sigma_j x_j)$. Therefore, the probability of victory for a candidate is increasing in the quality of his governance and decreasing in the opponent's quality of governance. Note that the benchmark model is a special case of this general setting where $\psi = 1$.

It is not difficult to show that the comparative statics of campaign choice with respect to the value of office, grassroots capacity, and the candidate's monitoring ability continue to hold under this more general setup.[11] The new comparative static of interest is how the candidates' equilibrium campaign choice depend on ψ, the impact of clientelistic politics on governance. The following result comports with the intuition that candidates are less likely to run broker-mediated campaigns when governance is likely to suffer under clientelistic politics.

Proposition 3. *The set of primitives T, K, and $c(\cdot)$ under which the candidates run broker-mediated campaigns in equilibrium is increasing in ψ in the sense of the set inclusion.*

The degree to which governance is prone to the ill-effects of clientelistic politics depends on the existing political institutions. Limitations on executive appointments, institutional guards against corruption (e.g. independence of the judiciary), and bureaucrats' career concerns, are some of the institutional factors that determine ψ. While it is intuitive that establishing institutional safeguards to governance improves public welfare, the proposition suggests that such measures may have the counter-intuitive consequence of worsening governance by encouraging candidates to pursue clientelistic politics. In particular, an increase in ψ—i.e., more robust governance—can lead to a switch from grassroots campaigns to broker-mediated campaigns equilibrium to the detriment of governance/welfare.

[11] Lemma A.3, which is key to characterizing equilibrium here, is similar to Lemma A.1 which helps characterize equilibrium in the benchmark. See Appendix for detail.

Besides institutional factors, voters' perception and information regarding clientelistic politics can impact how they respond to the nature of the campaigns. In the next section, we explore the impact of transparency on campaign choice and relate those results to some empirical studies that analyze the role of electoral transparency.

6. Transparency and Campaign Strategies

Recent experimental research (Bowles and Larreguy, 2019; Bidwell, Casey, and Glennester, forthcoming; Fujiwara and Wantchekon, 2014; Wantchekon et al., 2018) reveals that mechanisms that encourage deliberation and information dissemination, such as candidate debates and town hall meetings, may help overcome clientelism and enhance programmatic politics. One explanation for this result is that these strategies increase transparency (e.g., through better information transmission). More generally, there is much empirical evidence suggesting that the transparency of the electoral process greatly impacts the nature of political campaigns. A second common fact regarding clientelism is that incumbents are more likely to rely on brokers than challengers do.

To capture theses stylized facts, we extend our model to allow for limited transparency. Specifically, suppose that the grassroots campaign is the "default" option for candidates. We assume that a deviation from the grassroots campaign i.e., delegating to a broker, may not be perfectly observable to the voter. This reflects the fact that it tends to be that case that dealings with brokers are activities conducted behind the scene and away from public scrutiny. Formally, suppose the public observes a noisy signal of candidate i's campaign choice, $r_i \in \{g, b\}$, where g stands for grassroots campaign and b stands for broker-mediated campaign. We assume that $\Pr[r_i = g|\sigma_i = g] = 1$ and $\Pr[r_i = b|\sigma_i = b] = q_i < 1$. Thus, when a candidate delegates to a broker, he may successfully hide this fact from the voters. $1 - q_i$ is the probability that the voter mistakes a broker-mediated campaign as a grassroots campaign. Thus, the parameter q_i reflects how informed voters are, or how transparent the electoral process is.

In the appendix, we show that lack of full transparency can lead to a multiplicity of equilibria (see Lemma A.4). In particular, there may exist asymmetric equilibria in which the candidates adopt different campaign styles. Because the candidates' actions are no longer perfectly observable, the voter's reaction depends on their expectation of what the candi-

dates will do. This in turn shapes the candidates' incentives and thus create the possibility of self-fulling expectations. If the voter expects candidate i to run a broker-mediated campaign, then candidate i cannot effectively convince the voter that he is doing otherwise (i.e., run a grassroots campaign) because the voter "distrusts" the appearance of a grassroots campaign. Thus, candidate i has less incentive to act against the voter's expectation. One implication of this is that the condition under which a candidate chooses a broker-mediated campaign is weaker than in the benchmark model.

6.1. Town Hall Meetings

Empirical research has shown that certain activities frequently conducted in the midst of elections, such as debates and town hall meetings, improve governance and are useful to the transition from clientelism (Bowles and Larreguy, 2019; Bidwell, Casey, and Glennester, forthcoming; Fujiwara and Wantchekon, 2014; Wantchekon et al., 2018). One possible channel through which these activities may impact governance is through information transmission. Specifically, debates and town hall meetings may improve the transparency of the campaign by making policy preferences more evident, which in turn may help discipline the candidates. With our model, we can capture the effect of debates and town hall meetings by studying the comparative statics of the equilibria with respect to the parameter q_i (i.e., the probability of observing that candidate i is using a broker). For simplicity, we focus on the case where $q_1 = q_2 = q$.

Below, we show that an increase in q gives candidates stronger incentives to run a grassroots campaign, thereby improving governance after the election. Specifically, the set of primitives that gives rise to an equilibrium in which both candidates run clean campaigns expands.

Proposition 4. *The set of primitives T, K, and $c(\cdot)$ under which at least one candidate runs a grassroots campaign is increasing in q in the sense of set inclusion.*

Recall from the discussion above that limited transparency means that the voter's expectation of a broker-mediated campaign can be self-fulfilling; a candidate has less of an incentive to go against the voter's expectation and run a grassroots campaign because the voter is distrustful. As q increases, transparency increases, and the candidate is better able to break away from the voter's expectation of a broker-mediated campaign when it is indeed optimal

to do so. Hence, for certain specifications of parameters, the candidate switches from a broker-mediated campaign to a grassroots campaign as q increases.

6.2. Incumbency "Advantage"

In this section, we rationalize the stylized observation that incumbents tend to rely on brokers more frequently than challengers. For simplicity, let candidate 1 be the incumbent and candidate 2 the challenger. Assume that the two candidates is that $q_1 < q_2$, that is, the incumbent is better at avoiding public exposure of his dealings than the challenger, or that voters have less faith in the incumbent in running a truly clean campaign, compared to the challenger. This assumption is reasonable on several grounds. An incumbent may be more capable of making arrangements with brokers away from the spotlight. Similarly, an incumbent, being in a position of power, may have more sway on the media. This condition is particularly common in many developing democracies. Theoretically, this will allow the incumbent to minimize any unwanted scrutiny of his campaign.

An alternative interpretation of the parameter q_i is that it reflects how much trust voters have in a particular candidate. Specifically, $1 - q_i$ is the probability that the voter expects bad governance even when the winning candidate ran an apparently "clean" campaign. This interpretation would entail some superficial change to the results in this section, but it would not change the qualitative insights. Under this interpretation, $q_1 < q_2$ can be justified on the grounds that whenever the incumbent has a past history of bad governance, voters have less faith in his apparent effort to run a grassroots campaign.

Proposition 5 below shows that it is more likely that an incumbent engages in a broker-mediated campaign than a challenger does.

Proposition 5. *The set of primitives $T, K,$ and $c(\cdot)$ for which there exists an asymmetric equilibrium where the challenger chooses a broker-mediated campaign is a subset of the primitives for which there exists an asymmetric equilibrium where the incumbent chooses broker-mediated campaign.*

The intuition follows from the observation about the self-fulfilling aspect of voter expectation in the presence of imperfect observability. In particular, a candidate is more likely to run a broker-mediated campaign if the voter expects so. Proposition 4 shows that this incentive is

decreasing in q_i – the probability that the voter detects a broker-mediated campaign. Thus, given that the incumbent is better able to "conceal" clientelistic activities, he is more likely than the challenger to run a broker-mediated campaign in equilibrium.

7. Career Concerns and Governance

The quality of governance is ultimately a consequence of actions and decisions by individual government officials or bureaucrats. If bureaucrats are short-sighted and choose to simply maximize their short-run gains, they may well undertake various activities that benefit themselves but undermine governance (e.g. corruption). However, sometimes these individuals harbor ambitions of running for higher office in the future. They may therefore have a stake in maintaining good governance while in office, as any scandalous behavior can create reputation problems down the road. In this section, we endogenize the quality of governance as the consequence of actions of the broker-turned-bureaucrat and explore the impact of career concerns of brokers on the candidates' campaign choices.

Formally, we assume that a bureaucrat can either exert effort or shirk in office (a binary choice). The quality of governance is 1 if the bureaucrat exerts effort and ψ if he shirks. For simplicity, we suppose that the politician can induce effort from bureaucrats selected through the usual channel i.e., through the system of civil service. If the politician ran a broker-mediated campaign, he is constrained to appoint the broker as the bureaucrat, whom the politician cannot perfectly control. Thus, the broker-turned-bureaucrat makes a strategic decision whether to exert effort. Suppose that effort costs κ. Besides the instantaneous value to office, T, there is a potential opportunity to run for higher office after having served in the bureaucracy. Let $V > \kappa$ denote the value of such opportunities. If the broker shirked while in office, there is a probability τ that it becomes a political scandal in the future and effectively bars him from running for higher office. Therefore, the broker's payoffs, upon being appointed as a bureaucrat, is $T+(1-\tau)V$ if he shirks and $T+V-\kappa$ if he exerts effort. The broker's career concerns are parametrized by V and τ. The higher the V, the greater the value the broker places on future opportunities to run for higher office. The higher the τ, the more damaging shirking is to his future ambitions and career. Specifically, the broker exerts effort as a bureaucrat if and only if $\tau V \geq \kappa$.

The proposition below shows that unsurprisingly, career concerns help to improve governance by reducing the broker's incentive to shirk.[12] Moreover, candidates are more willing to use brokers when the value of future office, V, is high. However, τ can have an ambiguous effect on the candidates' campaign choice in equilibrium.

Proposition 6. *The set of primitives K, T and $c(\cdot)$ under which the candidates choose broker-mediated campaigns is increasing in V in the sense of set inclusion. The effect of an increase in τ on the nature of the campaigns in equilibrium is ambiguous.*

Note that the broker's incentive for effort while in office is increasing in both V and τ. Moreover, for higher values of V, the broker has more incentives to expend effort during the campaign. Therefore, the candidates have a stronger incentive to run a broker-mediated campaigns under higher values of V. Now, an increase in τ improves the broker's incentives for effort as a bureaucrat, which helps his candidate's electoral prospect, all else equal. At the same time, higher τ means that the broker's overall value for office decreases, and this leads to less incentives to invest in campaign effort. Hence, depending on the configuration of the rest of the parameters, an increase in τ can lead to a switch from grassroots campaigns to broker-mediated campaigns in equilibrium, or vice versa.

8. Conclusions

For a long time, formal theories of electoral competition focused on the dyadic relationship between candidates and voters, leaving intermediaries aside. However, recent theoretical and empirical accounts have underscored the important role that different types of intermediaries play. In some of these studies, brokers tend to be understood as mere cash machines that transfer money from candidates to voters or they help to resolve informational problems and the enforceability dilemma. Specifically, brokers understand better the citizens' needs and have higher monitoring capabilities and the possibility of learning how citizens vote. However, these stories fail to link brokers to patronage—the allocation of government resources, such as public employment, in exchange for political support. We claim that it is crucial to unify both frameworks in order to understand some of the most salient consequences of clientelism. Brokers are often appointed to public office once the election is over and their

[12] Note here the equilibrium must be symmetric i.e., the candidates make the same campaign choices.

candidate wins, something that has deep implications in terms of the quality of governance and consequently, the citizens' welfare.

In this paper we develop a model of electoral competition that integrates elements of patronage and broker-mediated campaigns. In our setup, candidates have the possibility of running grassroots campaigns, whereby foot soldiers are hired directly to exert certain effort to increase the odds of winning the election; or they can enlist a broker, who runs the candidate's campaign in exchange for the appointment to a public sector job upon victory. Our model shows under what conditions patronage prevails over grassroots campaigning. When public offices are highly valuable, something typical in institutional settings where corruption and prebendalism abound, patronage is the preferred strategy of candidates. This result is important, as it links two related phenomena in developing countries: clientelism and corruption.

Our theory also connects the prevalence of patronage to electoral institutions, particularly to rules directly affecting campaign financing. When candidates do not have enough resources to run a grassroots campaign, they may be restricted from hiring agents. However, candidates' and agents' incentives may be aligned through generous contracts, and so alliances with intermediaries capable of compensating for these restrictions become more attractive. Hence, formal institutions that curtail resources available for running grassroots campaigns may encourage patronage. Finally, our model also provides an explanation for the evident connection between monitoring capabilities of candidates and patronage. As societies become more urban and complex, direct connections between politicians and voters become less feasible and brokers' activities become more important.

We also argue that patronage is harmful because the quality of the bureaucracy is lower when brokers are appointed to public offices as a way to reward the votes they deliver, and not because of their skills and merits. Forward-looking voters, who value the quality of public servants, may curtail this behavior if they punish candidates that rely on patronage. The problem is that voters' interests in these features are endogenous, and in clientelistic settings, structural factors such as income, education, or political engagement, or electoral strategies such as vote buying, may diminish the incentives to identify which type of bureaucrats will be appointed by each candidate. Consequently, educational and informational campaigns (Vicente, 2014), or mechanisms for citizen/candidate deliberation (Fujiwara and

Wantchekon, 2014), may constitute effective strategies to overcome the vicious cycle that characterizes political clientelism.

Appendix

A. Proofs

First, define $x^{b,g}$ to be the broker's best response to x^g, i.e.,

$$x^{b,g} \equiv \text{argmax}_x \rho(x, x^g) \cdot T - c(x)$$

The assumptions on ρ ensure that a solution exists and is unique. We first present a lemma that is useful to establishing the results.

Lemma A.1. *If $x^{b,g} < x^g$, then both candidates run grassroots campaigns in equilibrium. If $x^{b,g} > x^g$, then both candidates run broker-mediated campaigns in equilibrium. If $x^{b,g} = x^g$, then the candidates are indifferent between either campaign types. Moreover, a sufficient and necessary condition for $x^{b,g} < (>) x^g$ is*

$$T \cdot \frac{\partial \rho}{\partial x_i}(x^g, x^g) < (>) c'(x^g) \tag{1}$$

Proof. There are three different types of subgames that follow the candidates' choice of grassroots campaign vs. patronage. First, if both candidates choose grassroots campaigns, then the foot soldiers exert effort x^g and both candidates win with probability $\frac{1}{2}$ by the symmetry of $\rho(\cdot, \cdot)$. If both candidates choose to enlist a broker, then the brokers compete with each other (we will call this the contest game). Given the assumptions on $\rho(\cdot, \cdot)$ and $c(\cdot)$, we will show that there is a unique equilibrium of this subgame and that it is symmetric (i.e., both brokers exert the same effort), which implies that the candidates are equally likely to win.

First, the convexity of c, $\frac{\partial^2 \rho}{\partial x_i^2} \leq 0$, and the fact that $\frac{\partial \rho(x,x)}{\partial x_i}$ is monotonically decreasing in x implies that there exists a unique symmetric pure strategy equilibrium for the contest game. Moreover, the assumption that $\frac{\partial^2 \rho}{\partial x_i^2} \leq \frac{\partial^2 \rho}{\partial x_i \partial x_j}$ rules out asymmetric pure strategy equilibria by ensuring that whenever $y < x$, it is the case that $\frac{\partial \rho(x,y)}{\partial x} < \frac{\partial \rho(y,x)}{\partial y}$. Thus, if the two brokers exert different levels of effort, then at least one has a profitable deviation. Suppose the broker for candidate 1 is exerting lower effort than the broker for candidate 2 and the former is in fact optimizing. This implies that the marginal cost of effort for the latter is lower than the marginal benefit of effort. Hence, the broker for candidate 2 would like to deviate. Lastly,

if one of the candidates (say 1) chooses the grassroots campaign while the other chooses the broker-mediated campaign, then in the subgame that follows, the campaign effort of candidate 1 will be x^g while the effort for candidate 2 will be $x^{b,g}$.

Now, if $x^g \neq x^{b,g}$, then the candidates must run the same type of campaign in equilibrium. Suppose first $x^{b,g} < x^g$, then both candidates choosing a grassroots campaign is an equilibrium since any deviation to a broker-mediated campaign leads to less campaign effort. Moreover, both candidates choosing patronage cannot be an equilibrium, since choosing the grassroots campaign would be a profitable deviation for either candidate. A similar argument in the case of $x^{b,g} > x^g$ shows that the both candidates choose broker-mediated campaigns in equilibrium in this case. Finally, inequalities (1) is derived from the fact that $x^{b,g}$ is the solution to the equation $T \cdot \frac{\partial \rho}{\partial x_i}(x^{b,g}, x^g) = c'(x^{b,g})$. Thus, if $T \cdot \frac{\partial \rho}{\partial x_i}(x^g, x^g) < (>) c'(x^g)$, then by the concavity of ρ, it has to be that $x^{b,g} < (>) x^g$. □

Proof for Proposition 1

Proof. Let x_T^g be implicitly defined by the following equality

$$T \cdot \frac{\partial \rho}{\partial x_i}(x_T^g, x_T^g) = c'(x_T^g) \tag{2}$$

Note that the LHS of the equality is increasing in T and decreasing in x^g, while the RHS is increasing in x^g by the convexity of c. Thus, we have that x_T^g is increasing in T. Now, define $\hat{K}(T) = c'(x_T^g)$ (the assumptions on $c(\cdot)$ ensures that it is well defined). Thus, we have that $\hat{K}(T)$ is increasing in T. Finally, the equilibrium characterization follows from Lemma A.1, noting that whenever $K < (>) \hat{K}(T)$, it is the case that $x^g < (>) x_T^g$ and therefore

$$T \cdot \frac{\partial \rho}{\partial x_i}(x_T^g, x_T^g) > (<) c'(x_T^g).$$

□

Proof for Proposition 2 We first prove the following lemma.

Lemma A.2. *Let $x^g(N)$ be the effort under grassroots campaign and signal structure S_N, and x^* be such that $c(x^*) = K$. Then, $x^g(N) \uparrow x^*$ as $N \to \infty$.*

Proof. First, note that for any S_N, $x^g(N) \leq x^*$ since at most the foot soldier obtains zero utility under effort x^*. Next, we argue that $x^g(N)$ is bounded from below by $\underline{x}^N = \max\left[\frac{n-1}{N} : \frac{n}{N} < x^*\right]$. In particular, consider the contract where the foot soldier is paid K if and only if $s_{\hat{n}}$ is observed, where $\hat{n} = \max\left[n : \frac{n}{N} < x^*\right]$. Since $s_{\hat{n}}$ may be observed if $x \geq \frac{\hat{n}-1}{N}$, and it is observed for sure if the foot soldier exerts effort $x = \frac{\hat{n}}{N}$, the foot soldier's utility under the optimal effort choice must satisfy

$$\max_{x \in [\frac{\hat{n}-1}{N}, \frac{\hat{n}}{N}]} Pr(s_{\hat{n}}|x)K - c(x) \geq K - c\left(\frac{\hat{n}}{N}\right) > 0$$

Thus, the proposed contract satisfies the IR constraint, and under this proposed contract, the optimal effort induced by the contract is at least greater than $\frac{\hat{n}-1}{N}$. This means that the foot soldier's effort under the optimal contract is also greater than $\underline{x}^N$. Now, it is straightforward to see that $\underline{x}^N \to x^*$ as $N \to \infty$, which implies that $x^g(N) \uparrow x^*$. □

The proposition follows immediately from Lemmas A.1 and A.2. Note that the condition $T \cdot \frac{\partial \rho}{\partial x_i}(x^*, x^*) < c'(x^*)$ ensures that candidates prefer to run grassroots campaigns when they have perfect monitoring (otherwise the candidates prefer broker-mediated campaigns). This condition is satisfied so long as K is not too low, since x^* is strictly increasing in K.

Proof for Proposition 3 Similar to the benchmark setup, we define

$$x^{b,g} \equiv \text{argmax}_x T \cdot \rho(\psi x, x^g) - c(x).$$

In other words, $x^{b,g}$ is a broker's best response to the effort level under a grassroots campaign, x^g. The following Lemma, which generalizes Lemma A.1, is used to prove the proposition.

Lemma A.3. *There exists a threshold $\bar{x} \geq x^g$ such that if $x^{b,g} < \bar{x}$, both candidates choose grassroots campaigns in equilibrium. If $x^{b,g} > \bar{x}$, then both candidates choose broker-mediated campaigns in equilibrium. If $x^{b,g} = \bar{x}$, then the candidates are indifferent between the two types of campaign.*

Proof. The argument follows closely the argument for Lemma A.1. The only difference is that in order for a candidate to find the broker-mediated campaign optimal, the broker must be willing to exert effort that is sufficiently greater than the effort under the grassroots campaign. This is because the broker-mediated campaign lowers the probability of election,

all else equal. The effort at which a broker-mediated campaign yields a one-half probability of winning against a grassroots campaign is $\bar{x}$; i.e., $\bar{x}$ satisfies $\rho(\psi\bar{x}, x^g) = \frac{1}{2}$.

□

With the lemma, we are now ready to prove the proposition. First, we argue that $\bar{x}$ is decreasing in ψ. This is straightforward, since $\bar{x}$ by definition satisfies $\rho(\psi\bar{x}, x^g) = \frac{1}{2}$ and ρ is both arguments. Now, the primitives T, K, and c determine $x^{b,g}$ and x^g. Thus, if $x^{b,g} > \bar{x}$ is satisfied under a specification of primitives given ψ, then so it would under $\psi > \psi$. Consequently, the set of primitives that induce broker-mediated campaigns in equilibrium is increasing in ψ in the sense of set inclusion.

Preliminary Observations for Section 6

Lemma A.4. *There exists an equilibrium where candidate i runs a broker-mediated campaign and candidate j runs a grassroots campaign if and only if $x^g \leq x^{b,g}$ and*

$$(1 - q_j)\rho(x^{\tilde{b},b}, \psi x^{b,\tilde{b}}) + q_j \frac{1}{2} \leq \rho(x^g, \psi x^{b,g})$$

where

$$x^{\tilde{b},b} = argmax_x T \cdot \rho(x, \psi x^{b,\tilde{b}}) - c(x)$$
$$x^{b,\tilde{b}} = argmax_x T \cdot \rho(\psi x, x^{\tilde{b},b}) - c(x)$$

Moreover, it is the case that $x^{\tilde{b},b} > \psi x^{b,\tilde{b}}$.

Proof. Given the symmetry of the game, it is sufficient to identify conditions under which candidate 1 runs a broker-mediated campaign while candidate 2 runs a grassroots campaign. Now, notice that if the voter believes that candidate 1 uses a broker, then the function ρ takes $\sigma_1 = \psi$ as input regardless of candidate 1's actual action. Thus, candidate 1's campaign choice would depend solely on whether the broker exerts more or less effort than x^g—the effort under a grassroots campaign. Hence, a broker-mediated campaign is optimal for candidate 1 given the voter's belief that this is the case if and only if $x^{b,g} \geq x^g$. Note that this condition is weaker than the one found in Lemma A.3. On the other hand, candidate 2

has no incentive to deviate from a grassroots campaign so long as

$$(1-q_2)\rho(x^{\tilde{b},b},\psi x^{b,\tilde{b}})+q_2\frac{1}{2}\leq\rho(x^g,\psi x^{b,g})$$

where these parameters $x^{\tilde{b},b},x^{b,\tilde{b}}$ solve simultaneously:

$$x^{\tilde{b},b}=\text{argmax}_x T\cdot\rho(x,\psi x^{b,\tilde{b}})-c(x)$$
$$x^{b,\tilde{b}}=\text{argmax}_x T\cdot\rho(\psi x,x^{\tilde{b},b})-c(x)$$

In other words, $x^{\tilde{b},b}$ and $x^{b,\tilde{b}}$ are equilibrium campaign efforts when 1) both candidates choose broker-mediated campaigns and 2) the voter expects that candidate 1 is running a grassroots campaign while candidate 2 is running a broker-mediated campaign. Now we argue that $x^{\tilde{b},b}>\psi x^{b,\tilde{b}}$. Suppose not, i.e., $x^{\tilde{b},b}\leq\psi x^{b,\tilde{b}}$; then, the assumption that $\frac{\partial^2\rho}{\partial x_i^2}\leq\min\{0,\frac{\partial^2\rho}{\partial x_i\partial x_j}\}$ implies that

$$T\cdot\frac{\partial\rho}{\partial x_i}(x^{\tilde{b},b},\psi x^{b,\tilde{b}})>\psi\cdot T\cdot\frac{\partial\rho}{\partial x_i}(\psi x^{b,\tilde{b}},x^{\tilde{b},b})$$

Moreover, since $\psi<1$, we have that $c'(x^{b,\tilde{b}})>c'(x^{\tilde{b},b})$. Recall that one of the equilibrium optimality conditions is

$$T\cdot\frac{\partial\rho}{\partial x_i}(x^{\tilde{b},b},\psi x^{b,\tilde{b}})=c'(x^{\tilde{b},b})$$

But this implies the other equilibrium optimality condition i.e.,

$$\psi\cdot T\cdot\frac{\partial\rho}{\partial x_i}(\psi x^{b,\tilde{b}},x^{\tilde{b},b})=c'(x^{\tilde{b},b})$$

cannot hold.

□

Corollary 1. *Asymmetric equilibria exist if $x^g\leq x^{b,g}<\bar{x}$ and q_2 is sufficiently large, where $\bar{x}$ is as defined in Lemma A.3.*

Proof. If $x^{b,g}<\bar{x}$, then $\rho(x^g,\psi x^{b,g})>\frac{1}{2}$. Now, note that $x^{\tilde{b},b},x^{b,\tilde{b}}$ are defined independently of q_2 and therefore with q_2 sufficiently large, $(1-q_2)\rho(x^{\tilde{b},b},\psi x^{b,\tilde{b}})+q_2\frac{1}{2}<\rho(x^g,\psi x^{b,g})$.

□

Proof for Proposition 4

Proof. Since $q_1 = q_2 = q$, the game is symmetric. Therefore, if both candidates choose the same type of campaign, their win probability will be $\frac{1}{2}$. Nonetheless, imperfect observability gives rises to asymmetric equilibria. Note that the sufficient and necessary condition for a symmetric equilibrium where both candidates run clean campaigns is

$$q \cdot \rho\left(\psi x^{b,g}, x^{g}\right) + (1-q) \cdot \rho\left(x^{\tilde{b},g}, x^{g}\right) \leq \frac{1}{2}$$

where $x^{\tilde{b},g} \equiv \text{argmax}_x T \cdot \rho(x, x^g) - c(x)$. Note that $\rho\left(\psi x^{b,g}, x^{g}\right) < \rho\left(x^{\tilde{b},g}, x^{g}\right)$, and an increase in q relaxes the constraints on the other primitives. Now, let's consider possible asymmetric equilibria where one candidate runs a grassroots campaign while the other runs a broker-mediated campaign. By Lemma A.4, suppose that $x^{b,g} \geq x^g$, the sufficient and necessary for the asymmetric equilibrium is

$$(1-q)\rho(x^{\tilde{b},b}, \psi x^{b,\tilde{b}}) + q\frac{1}{2} \leq \rho(x^g, \psi x^{b,g})$$

Note that $x^{b,g}, x^g, x^{\tilde{b},b}, x^{b,\tilde{b}}$ are all independent of q. Now, the fact that $x^{\tilde{b},b} > \psi x^{b,\tilde{b}}$ (see Lemma A.4) means that $\rho(x^{\tilde{b},b}, \psi x^{b,\tilde{b}}) > \frac{1}{2}$. It follows that as q increases, the LHS of the inequality above decreases. This means that the set of primitives such that the inequality holds is increasing in the sense of set inclusion.

□

Proof for Proposition 5

Proof. Assuming that $x^{b,g} \geq x^g$, then by Lemma A.4, the sufficient and necessary condition for the existence of an asymmetric equilibrium where the challenger runs a broker-mediated campaign is

$$(1-q_1)\rho(x^{\tilde{b},b}, \psi x^{b,\tilde{b}}) + q_1\frac{1}{2} \leq \rho(x^g, \psi x^{b,g}) \tag{3}$$

and the sufficient and necessarily condition for the existence of an asymmetric equilibrium where the incumbent runs a broker-mediated campaign is

$$(1-q_2)\rho(x^{\tilde{b},b},\psi x^{b,\tilde{b}})+q_2\frac{1}{2}\leq\rho(x^g,\psi x^{b,g}) \tag{4}$$

Now, recall that $x^{\tilde{b},b}>\psi x^{b,\tilde{b}}$. Now, since q_1 is less than q_2, it is the case that inequality (3) implies inequality (4). Hence, the set of primitives under which the asymmetric equilibrium where the challenger runs a broker-mediated campaign exists is a subset of the primitives under which the asymmetric equilibrium where the incumbent runs a broker-mediated campaign exists.

□

Proof for Proposition 6

Proof. The candidates run broker-mediated campaigns in equilibrium if and only if

$$\rho\left(\tilde{\sigma}_1\tilde{x}^{b,g},x^g\right)\geq\frac{1}{2}$$

where $\tilde{\sigma}_1=\mathbb{1}\{\tau V>\kappa\}+(1-\mathbb{1}\{\tau V>\kappa\})\psi$ ($\mathbb{1}\{\cdot\}$ is the indicator function) and

$$\tilde{x}^{b,g}\equiv\text{argmax}_x\rho(\tilde{\sigma}_1x,x^g)\left(T+(1-\tau)V+\mathbb{1}\{\tau V>\kappa\}\left(\tau V-\kappa\right)\right)-c(x).$$

Note that $\tilde{\sigma}_1$ is weakly increasing in V and consequently so is $\tilde{x}^{b,g}$. Thus, the set of primitives in which the candidates run broker-mediated campaigns in equilibrium is increasing in V.

Now, let us examine the ambiguous effect of an increase in τ on equilibrium campaign choices. Suppose $\tau'>\tau$ and $\tau' V<\kappa$; then, in this case, $\tilde{x}^{b,g}$ would be smaller under τ' than under τ. This means that an increase from τ to τ' could lead to a switch from broker-mediated campaigns to grassroots campaigns under some specification of the primitives. On the other hand, suppose $\tau V<\kappa$ but $\tau' V>\kappa$; then, in this case, $\tilde{\sigma}_1$ and $\tilde{x}^{b,g}$ are strictly greater under τ' than under τ. Here an increase from τ to τ' may lead to a switch from grassroots campaigns to broker-mediated campaigns under some specification of the primitives.

□

B. Endogenizing ρ in a Probabilistic Voting Framework

We provide a microfoundation for the function $\rho(\cdot,\cdot)$, based on a probabilistic voting model. Let there be a measure 1 of voters, who have ideal policy preferences ω on the interval $[-\frac{1}{2},\frac{1}{2}]$. Let the end point $-\frac{1}{2}$ be the position of candidate 1 and the end point $\frac{1}{2}$ be the position of candidate 2. The preference of voters depends on their ideal points and on campaign effort of the candidates. Define the difference in voter ω's utility for candidates 1 and 2 as $\triangle(x_1,x_2,\omega)=\phi(x_1,x_2)-\omega$. We assume that given effort by the candidates, x_1 and x_2, voter ω votes for candidate 1 iff $\triangle(x_1,x_2,\omega)\geq 0$. We normalize $\phi(\cdot,\cdot)$ so that $\phi(x_1,x_2)=0$ if $x_1=x_2$ and $\phi(x_1,x_2)\in(-\frac{1}{2},\frac{1}{2})$. Finally, assume there is uncertainty about the location of the median voter ω_m, which is equivalent to uncertainty about the distribution of voter ideal points. Assume that the common prior of ω_m is the uniform distribution over the interval $[-\frac{1}{2},\frac{1}{2}]$. Given this, for any x_1,x_2, the probability that candidate 1 wins is $Pr\left(\omega_m\leq\phi(x_1,x_2)\right)=\phi(x_1,x_2)+\frac{1}{2}$. We can then define $\rho(x_1,x_2)=\phi(x_1,x_2)+\frac{1}{2}$ and ρ would inherit all the property of ϕ (e.g., monotonicity/concavity).

References

Aaker, Jennifer, and Victoria Chang. 2010. "Obama and the Power of Social Media and Technology." *European Business Review* pp. 16–21.

Baland, J., and J. Robinson. 2007. *How Does Vote-Buying Shape the Economy?* in Elections for Sale ed. Lynne Rienner.

Baldwin, Kate. 2013. "Why Vote with the Chief? Political Connections and Public Goods Provision in Zambia." *American Journal of Political Science* 57 (4): 794–809.

Baldwin, Kate. 2014. "Chief, Land and Coalition-Building in Africa." *Comparative Politics* 46 (3): 253–271.

Banks, Jeffrey, and Rangarajan Sundaram. 1998. "Optimal Retention in Agency Problems." *Journal of Economic Theory* 82 (2): 293–323.

Bardhan, Pranab, and Dilip Mookerjee. 2012. "Political Clientelism-cum-Capture: Theory and Evidence from West Bengal." Working Paper, Boston University.

Bardhan, Pranab, and Dilip Mookerjee. 2017*a*. "Clientelistic Politics and Economic Development: An Overview." Working Paper, Boston University.

Bardhan, Pranab, and Dilip Mookerjee. 2017*b*. "Clientelistic Politics versus Programmatic Politics." Working Paper, Boston University.

Besley, Timothy, and Stephen Coate. 1997. "An economic model of representative democracy." *The Quarterly Journal of Economics* 112 (1): 85–114.

Bidwell, Kelly, Katherine Casey, and Rachel Glennester. forthcoming. "Debates: Voting and Expenditure Responses to Political Communications." *Journal of Political Economy* .

Bowles, Jeremy, and Horacio Larreguy. 2019. "Who Debates, Who Wins? At-Scale Experimental Evidence on Debate Participation in a Liberian Election." Working Paper, Harvard University.

Brierley, Sarah. 2019. "Unprincipled Principals: Co-opted Bureaucrats and Corruption in Ghana." Working Paper.

Brusco, Valeria, Marcelo Nazareno, and Susan Carol Stokes. 2004. "Vote buying in Argentina." *Latin American Research Review* 39 (2): 66–88.

Bussell, Jennifer. 2018. "When Do Middlemen Matter? Experimental Evidence on Corruption in India." *Governance* .

Caillaud, Bernard, and Jean Tirole. 2002. "Optimal Retention in Agency Problems." *Quarterly Journal of Economics* 117 (4): 1453–1489.

Calvert, Randall. 1985. "Robustness of the Multidimensional Voting Model: Candidate Motivations, Uncertainty, and Convergence." *American Journal of Political Science* 29 (1): 69–95.

Calvo, Ernesto, and Victoria Murillo. 2004. "Who Delivers? Partisan Clients in Argentine Electoral Marketplace." *American Journal of Political Science* 48 (4): 742–757.

Camp, E., A. Dixit, and S. Stokes. 2014. "Catalyst of Cause? Legislation and the Demise of Machine Politics in Britain and the U.S." *Legislative Studies Quarterly* 39 (4): 559–592.

Camp, Edwin. 2015. "Cultivating Effective Brokers: A Party Leader's Dilemma." *British Journal of Political Science* 47 (3): 521–543.

Colonnelli, Emanuele, Edoardo Teso, and Mounu Prem. 2019. "Patronage and the Selection in Public Sector Organizations." Working Paper.

Cox, Gary. 1987. *The Efficient Secret*. Cambridge University Press.

de la O, Ana. 2013. "Do Conditional Cash Transfers Affect Electoral Behavior? Evidence from Randomized Experiment in Mexico." *American Journal of Political Science* 57.

Dixit, Avinash, and John Londregan. 1996. "The Determinants of Success of Special Interest in Redistributive Politics." *Journal of Politics* 58: 1132–1155.

Downs, Anthony. 1957. *An Economic Theory of Democracy*. Harper and Row.

Fujiwara, Thomas, and Leonard Wantchekon. 2014. "Can Informed Public Deliberation Overcome Clientelism? Experimental Evidence from Benin." *American Economic Journal: Applied Economics* 5 (4): 241–255.

Gallego, Jorge. 2015. "Self-Enforcing Clientelism." *Journal of Theoretical Politics* .

Gingerich, Daniel, and Luis Medina. 2013. "The Endurance and Eclipse of the Controlled Vote: A Formal Model of Brokerage Under the Secret Ballot." *Economics and Politics* 25 (3): 453–480.

Hollibaugh, Gary. 2015. "The Political Determinants of Ambassadorial Appointments." *Presidential Studies Quarterly* 45 (3): 445–466.

Hotelling, Harold. 1929. "Stability in Competition." *The Economic Journal* 39 (15): 41–57.

Keefer, Phillip, and Razvan Vlaciu. 2008. "Democracy, Credibility, and Clientelism." *Journal of Law, Economics, and Organization* 24 (2): 371–406.

Khemani, S. 2015. "Buying Votes Versus Supplying Public Services: Political Incentives to Under-Invest in Pro-Poor Policies." *Journal of Development Economics* 117: 84–93.

Kitschelt, Herbert, and Steven Wilkinson. 2007. *Patrons, Clients, and Policies. Patterns of Democratic Accountability*. Cambridge University Press.

Lande, Carl. 1977. *Introduction: The Dyadic Basis of Clientelism.* University of California Press.

Larreguy, Horacio. 2013. "Monitoring Political Brokers: Evidence from Clientelistic Networks in Mexico." Working Paper, Harvard University.

Larreguy, Horacio, John Marshall, and Pablo Querubin. 2016. "Parties, Brokers, and Voter Mobilization: How Turnout Buying depends upon Party's Capacity to Monitor Brokers." *American Political Science Review* 110 (1): 160–179.

Leon, Gianmarco, and Leonard Wantchekon. 2019. *Clientelism in Decentralized States.* in Decentralized Governance and Accountability: Academic Research and the Future of Donor Programming ed. Cambridge University Press.

Lindbeck, Assar, and Jorgen Weibull. 1987. "Balanced Budget Redistribution as the Outcome of Political Competition." *Public Choice* 52 (3): 273–297.

Lizzeri, Alessandro, and Niccola Persico. 2001. "The Provision of Public Goods under Alternative Electoral Incentives." *American Economic Review* 91 (1): 259–267.

Mitgang, H. 2000. *Once Upon a Time in New York.* Simon and Schuster.

Nichter, Simeon. 2008. "Vote buying or turnout buying? Machine politics and the secret ballot." *American political science review* 102 (01): 19–31.

Osborne, Martin, and Al Slivinsky. 1996. "A Model of Political Competition with Citizen-Candidates." *The Quarterly Journal of Economics* 111 (1): 65–96.

Robinson, James, and Thierry Verdier. 2013. "The Political Economy of Clientelism." *Scandinavian Journal of Economics* 115 (2): 260–291.

Samuels, David. 2002. "Pork Barreling Is Not Credit Claiming or Advertising: Campaign Finance and the Sources of the Personal Vote in Brazil." *Journal of Politics* 64 (3): 445–466.

Sarkar, A. 2014. "Clientelism, Contagious Voting and Quality of Electoral Institutions." Working Paper.

Shachar, Ron, and Barry Nalebuff. 1997. "Follow the Leader: Theory and Evidence on Political Participation." *American Economic Review* 89 (3): 525–547.

Stokes, Susan. 2002. *Political Clientelim.* Oxford University Press.

Stokes, Susan. 2005. "Perverse Accountability: A Formal Model of Machine Politics with Evidence from Argentina." *American Political Science Review* 99 (3): 315–325.

Stokes, Susan, Thad Dunning, Marcelo Nazareno, and Valeria Brusco. 2013. *Brokers, Voters, and Clientelism. The Puzzle of Distributive Politics.* Cambridge University Press.

van de Walle, Nicolas. 2007. *Meet the New Boss, Same as Old Boss?: The Evolution of Political Clientelism in Africa.* in Patron, Clients, and Policies ed. Cambridge University Press.

Vicente, Pedro. 2014. "Is Vote-buying Effective? Evidence from a Field Experiment in West Africa." *Economic Journal* 124 (574): F356–F386.

Wantchekon, Leonard. 2003. "Clientelism and Voting Behavior: Evidence from a Field Experiment in Benin." *World Politics* 55 (3): 399–422.

Wantchekon, Leonard, Gabriel Lopez-Moctezuma, Thomas Fujiwara, Cecilia Pe Lero, and Daniel Rubenson. 2018. "Policy Deliberation and Voter Persuasion: Experimental Evidence from an Election in the Philippines." Working Paper.

Xu, Guo. 2018. "The Costs of Patronage: Evidence from the British Empire." *American Economic Review* 108 (11): 3170–3198.