

Crossing Party Lines: The Effects of Information on Redistributive Politics

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Abstract

This paper explores how the quality of information available to voters influences the choices they make in the polling booth and in turn affects the strategies of political parties competing for their support. To do so, the paper builds a model of redistributive politics under asymmetric information and then tests the resulting propositions with data from recent elections in Sierra Leone. Using the Lindbeck and Weibull (1987) model as a foundation, I incorporate a new determinant of voting choice—candidate quality—which is only imperfectly observed by voters. I show that voters with better information about candidates are more likely to cross ethnic party lines to support a high quality candidate. Furthermore, since information encourages voters to consider characteristics like candidate charisma that are difficult for parties to observe, it makes party forecasting of expected vote shares more uncertain. Such electoral uncertainty in turn induces parties to spread their resources more evenly across jurisdictions. Two institutional attributes of the empirical setting—ethnicity-based politics and decentralization—enable direct tests of these informational propositions as well as a novel identification strategy for the classic swing voter hypothesis. My results suggest that information could break the low accountability equilibrium in which citizens cast their votes blindly along partisan lines, creating little incentive for political parties to invest in candidate quality or provide resources to areas outside the most tightly contested jurisdictions.

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1 Introduction

The premise that competition amongst political parties will bid up the quality of candidates, and hence elected politicians, depends critically on how much voters know about the individuals running for office. When voters have little information about candidates, they are left with few options other than to vote “blindly” along party lines. In elections where the rival party candidate is of sufficiently superior quality, this lack of information prevents voters from making the optimal choice and setting aside their traditional party allegiances. Such uncritical support in turn provides little incentive for parties to recruit better quality candidates or for politicians to perform once in office. Moreover, uninformed voters enable competitive parties to invest their resources narrowly in areas that are closely divided along partisan lines, taking votes from their strongholds as given. Thereby distributing public funds according to electoral pressures is not a particularly efficient nor equitable way to allocate resources.

Such low information political contests are common in developing countries where the range and depth of mass media is often limited. In recent years, many of these same countries have transitioned to more decentralized systems of government, hoping to capitalize on the information advantages of local politicians who can more efficiently tailor public outputs to differences in local priorities and costs (Oates 1999). Yet an often overlooked complementary benefit is the information gains decentralization creates for voters, who are more likely to have knowledge of or a personal connection to their local as opposed to national politicians. This paper thus exploits the information differences created by decentralization to examine the question of how better information might improve voting choices and alter the redistributive strategies of competitive parties. Building on the Lindbeck and Weibull (1987) model, I introduce an information asymmetry where voters are better able to observe candidate quality than political parties, and then vary the extent of this asymmetry across local versus national elections to derive the effects of information on voter behavior and the allocation of public resources. The paper begins with a new approach to the classic swing voter proposition, and then shows how providing better quality information to voters relaxes their partisan loyalties and flattens the distribution of spending by parties vying for their support.

The first contribution of the paper is a novel identification strategy and empirical test of the swing voter investment theory. When voters are willing to trade off ideological preferences for consumption transfers from politicians, competing parties invest more resources in areas with weaker underlying party affiliation (Lindbeck and Weibull 1987; Dixit and Londregan 1996, 1998; Bardhan and Mookherjee 2010). Evaluating this claim empirically

confronts the fundamental challenge of measuring the strength of ideological or party loyalties, where the most obvious measure—actual vote shares—in part reflects investments that arise endogenously from the strategic game played among parties (Larcinese, Snyder and Testa 2008). The longstanding ties between ethnic groups and political parties in Sierra Leone offer a plausible solution: they imply that ethnic composition is a strong (and easily observed) predictor of party loyalty; and, since it is largely determined by historical settlement patterns, the measure is exogenous to short term fluctuations in political patronage flows. Applying the swing voter theory to ethnic politics suggests that public investment should be decreasing in the ethnic population advantage held by either of the two major parties. I find evidence that moving from a jurisdiction that is perfectly homogenous to one that is maximally competitive (where each party’s ethnic loyalists hold a 50 percent population share) results in a 1.02 standard deviation unit increase in the bundle of campaign goods distributed by national candidates and \$19,577 more public spending by elected local politicians. To provide a sense of magnitude, the latter difference is three times larger than the jurisdiction-level budget of a World Bank-funded development project (GoBifo Project 2009). These benefits accruing to more diverse constituencies stand in contrast to the literature documenting the negative effects of diversity on local public goods provision. This apparent divergence arises from a difference in perspective: while existing papers tend to focus on dynamics internal to communities—like differences in tastes that reduce contributions to public goods (Alesina, Baqir and Easterly 1999) or greater difficulties in imposing sanctions across as opposed to within ethnic groups (Miguel and Gugerty 2005)—the outcomes here concern patronage bestowed upon communities by external political agents vying for their support.

The model developed in this paper focuses on how information affects this redistributive game, and in particular, its influence on the strength of partisan loyalties. A key insight generated by the model is that voters are more likely to cross traditional party lines to support a higher quality rival party candidate when they have better information about the individuals competing for office. To test this proposition, I exploit the information differences created when Sierra Leone launched a decentralization reform program in May 2004, over thirty years after local government was abolished by former President Siaka Stevens. Since media coverage is limited, voters there rely on word of mouth and social networks for information about government, and these sources tend to be richer with regard to local as opposed to national politicians. As an example, Sierra Leoneans are twice as likely to be able to name and have been visited by their local versus national representative. Using voter fixed effects to control for all other observable and unobservable determinants of individual party choice, I show that the *same voters* are 11.3 percentage points more likely to cross party lines in

local elections where they have better information about candidates. Better information also encourages voters to split their ticket across candidates from different parties when voting for multiple offices simultaneously, which they are 12.3 percentage points more likely to do in local than in national elections. These findings contribute to the growing literature regarding the effects of supplying better information to voters, where information helps citizens vote out corrupt politicians (Ferraz and Finan 2008; Banerjee et al 2011), overcome social biases (Beamen et al. 2009), limit the capture of special interest groups (Grossman and Helpman 1996), and intensify their oversight of elected representatives (Khemani 2001; Snyder and Stromberg 2010).

The model also links information to the redistributive choices of politicians facing electoral pressures. In particular, the information difference generated by decentralization works in opposite directions for voters and political parties. It provides voters with more information on individual candidate characteristics—like competence and charisma—that sharpens their overall assessment of which candidate-party package is most desirable. At the same time, such opinions are more difficult for centralized political parties to gauge than traditional party loyalties, which makes forecasting voter behavior at the polls more uncertain. Theoretically, the greater uncertainty should induce parties to smooth their investments more evenly across jurisdictions. Using district and local government fixed effects, I confirm the prediction by showing that the allocation of campaign spending in local elections (where greater information about candidates alleviates voter reliance on party affiliation) responds only half as strongly to underlying ethnic-party loyalties as that in national races. The attenuating effect of information continues to hold under the more rigorous test that includes fixed effects for the 112 Parliamentary constituencies nationwide. Controlling for all other factors that make these small geographic areas attractive to politicians and migrants, this test shows that partisan bias is a significantly weaker determinant of how much campaign spending the *same jurisdiction* receives from candidates for local as opposed to national office. This idea resonates with Stromberg’s (2008) finding that the increasing availability of opinion poll data enables parties to more precisely predict vote shares and thereby encourages them to target their campaign resources more narrowly.

In the context of ethnicity-based politics, these results suggest that giving voters better information about candidates may reduce the salience of ethnic identity in electoral contests and resource allocation decisions. The finding that information increases the likelihood of voting across ethnic party lines implies that such deeply entrenched allegiances are not in fact immutable. Information could thereby be an important tool in breaking low accountability equilibria in which citizens vote blindly along partisan lines irrespective of the competence or performance of politicians. Furthermore, by shifting the focus from party affiliation to in-

dividual competencies, giving voters better information about candidates could help diffuse ethnic tensions and reduce the risk of violence surrounding elections. The recent outbreak of violence in Kenya underscores the urgency of the issue, where the Red Cross estimates that over 1,000 people were killed and more than 300,000 displaced during the highly contested December 2007 Presidential race (Gettleman 2008). Finally, providing candidate information to voters means that parties cannot rely as heavily on traditional ethnic loyalties and thus optimally choose to allocate resources more evenly across jurisdictions. Taken together, these results provide positive support for decentralization by highlighting how the information advantage it creates helps voters to make better choices and incentivizes politicians to allocate resources more equitably and with less regard to ethnic patronage.

The rest of the paper is structured as follows. Section 2 opens with a description of the political and institutional framework of Sierra Leone as the empirical application. Section 3 presents the theoretical model and derives the three propositions of interest. Section 4 discusses the data and econometric specifications before presenting results from the empirical tests. Section 5 considers potential alternative explanations for the main results, while Section 6 concludes.

2 Institutional Context: Ethnic Politics and Decentralization in Sierra Leone

Three aspects of the political landscape of Sierra Leone make it a particularly conducive empirical environment for estimating the effects of information on redistributive politics. First, the historical association between ethnic groups and political parties creates a plausibly exogenous measure of party preferences to test the swing voting investment theory. Second, estimating the role of information on voting choices and redistributive spending requires observation of the same citizens and political parties acting under differing amounts of information. For this Sierra Leone's two tier system of decentralized government creates a clear information difference across levels of government where voters have more knowledge of and interaction with candidates in local as opposed to national elections. Third, exit poll data reveals that voters in Sierra Leone care about the determinants of voting choice—consumption and party loyalty—identified in the standard swing voter model, and their preferences further justify an extension to include measures of candidate quality.

Beginning with the correlation between ethnicity and party loyalty, the two major political parties—the Sierra Leone People's Party (SLPP) and the All People's Congress (APC)—have strong, long-standing ties to the Mende and other ethnic groups in the South and the

Temne and other groups in the North, respectively. As an example of the strength of these loyalties, in the 2007 Parliamentary elections the APC won 36 of 39 seats in the Northern Province, while the SLPP and its splinter party, the People’s Movement for Democratic Change (PMDC), swept 24 of 25 seats in the South.¹ This implies that the ethnic composition of a jurisdiction is a strong predictor of its expected party loyalty, which is observable to both political parties and the econometrician. Furthermore, since ethnic composition is determined largely by historical settlement patterns and responds little to short term changes in government patronage, it is plausibly exogenous to the current redistributive promises of candidates.

Table 1 presents summary statistics regarding the population shares and estimated party loyalties of the major ethnic groups in Sierra Leone. The first column lists the national population share of each ethnic group based on 2004 census data, where we see that the two largest ethnic groups—the Temne and Mende—each account for roughly a third of the population. Column 2 estimates the party loyalty of each ethnic group by taking the proportion of voters belonging to that group who reported voting for the APC in the 2007 Presidential Election and subtracting from that the proportion who reported voting for the SLPP or PMDC. The strong negative estimate for the Mendes indicates widespread support for the SLPP, while the strong positive estimate for the Temnes indicates broad allegiance to the APC. Note that in the empirical analysis I use these national level statistics to infer the party loyalty of each ethnic group as a whole, and then use differences in local population shares to measure how the strength of the expected loyalty varies across jurisdictions. As a robustness check, the second measure of party bias presented in Column 3 abstracts away from reported votes, and maps each ethnic group to party based on historical accounts (Kandeh 1992) and author interviews with government officials. Where there was broad consensus amongst these sources regarding which party a particular ethnic group historically supported, a mapping was assigned. Where the sources conflicted or did not know the historical allegiance, the group was classified as unaffiliated.

Second, while standard theoretical arguments for decentralization focus on the information advantages of local representatives that facilitate efficiency gains, I instead focus on the information benefits it creates for voters. The following analyses consider national candidates from the 2007 Parliamentary races (MPs) who competed for seats in Parliament; and local candidates from the 2008 Local Council elections (LCs) who vied for seats in one of the many district-level Councils. In the United States context, MP candidates are akin to

¹While there are several smaller political parties, this paper restricts analysis to candidates from these three largest parties, grouping together candidates from the PMDC splinter party with those from its parent party, the SLPP.

politicians competing for seats in the national Congress, while the LC candidates would be similar to those competing for seats in the fifty state legislatures. Household data from 2007 confirms that citizens have more information about their local politicians: while 37 percent of respondents could correctly name their Councillor; only 17 percent could name their Parliamentarian.² In addition, the different nature of the local versus national politicians' jobs creates more opportunities for interaction between citizens and their local representatives. By law, Local Councillors are mandated to work and reside in their jurisdiction, while elected MPs move to the capital. As a result, while 52 percent of communities reported being visited by their elected Councillor in the past year, only 27 percent reported a visit from their MP. Mechanically, the fact that an MP represents over four times as many people as a Councillor means that the probability of personal interaction with one's MP is likely to be far lower. To conclude, these statistics suggest that voters have roughly twice as much information about candidates competing for local office as they do about candidates for national office.

Note that this informational framework is quite distinct from that of the U.S. where voters typically know more about national as opposed to state or county politics. This difference can be explained by the weak media presence in Sierra Leone: television ownership and programming are extremely limited (only 9 percent of households own a TV); high illiteracy rates mean that print media virtually does not exist outside the capital; and large areas of the country are cut off even from radio coverage (only 48 percent of households own a radio). This absence of media makes voters reliant on word of mouth and interpersonal exchange for most information about politics: household survey data from 2008 shows that 57 percent of respondents hear about what the government is doing from friends and relatives, as compared to only 34 percent from radio and less than 2 percent from television or newspapers. Such social networks are simply much richer with regard to local candidates, where the probability that someone within your network has a relationship to or an experience interacting with a local politician is higher.

Third, Sierra Leoneans consider all three factors identified in the model—politician promises, their own party loyalty and the quality of individual candidates—when deciding how to vote. At one extreme, the author's fieldwork indicates that laughter is not an uncommon response to questions about why someone voted for a particular political party, often followed by an explanation of how their father and grandfather voted for the same one. At the other extreme, when asked whom he would vote for, a citizen in the capital suggested that he would "wait and see what the parties bring," referring to common campaign practices of

²The statistics in the next two paragraphs are based on the IRCBP National Public Services (NPS) Survey 2007.

distributing t-shirts, food, alcohol and cash for votes.³ Thus while party loyalties are strong, some votes appear to be up for sale. More specifically, in exit polls conducted in 2008, voters listed the following reasons why they choose particular local candidates: political party (35 percent); promises of development (23 percent); and individual candidate characteristics such as their reputation or achievement in their previous job (17 percent), the candidate is a friend or relative of the voter (9 percent), the candidate helped the voter or his/her family in the past (4 percent), and the candidate's gender (3 percent). Importantly, Table 2 shows that while party and quality measures are equally as important in selecting local candidates (where 35 percent of voters cite each as the primary determinant of voting choice), the second row indicates that party is twice as important as quality in choosing national candidates (46 versus 21 percent). Looking at how the same voters behave in different elections, the final row of Table 3 shows that quality is significantly more likely to be the primary determinant of candidate choice in a local versus national race (by 14.5 percentage points) while party is less likely to matter (by 11.0 percentage points). Linking back to the information advantage enjoyed at the local level under decentralization, these differences preview the role information plays in encouraging voters to place more weight on quality and less emphasis on their ethnic-party loyalties in deciding whom to support.

3 A Model of Redistributive Politics under Asymmetric Information

This section builds a model of redistributive politics under asymmetric information that explores how the quality of information available to voters affects their choices and in turn the allocation of public funds by political parties attempting to garner their support. Using the Lindbeck and Weibull (1987, hereafter L&W) model as a foundation, I incorporate a new candidate quality factor and an information asymmetry that was not explored in their seminal work. I first show that their swing voter investment proposition still holds as a sub-case of the extended model, and then derive two new theoretical propositions regarding the effects of information on voting choices and redistributive spending.

3.1 Jurisdictions and Political Transfers

The basic intuition of the model is that if voters are willing to trade off ideological loyalties for public investments in their neighborhood, political parties will strategically allocate resources towards areas where their investments will “buy” them the most votes. More

³Author field interview, June 2008.

specifically, voters are partitioned into J disjoint subsets (I_j) or jurisdictions, which are defined geographically and contain n_j residents, where the total population is $\sum_j n_j = n$. Each constituency elects one politician to represent them in the national Parliament.⁴ Two political parties ($p \in \{A, B\}$) compete for votes by promising consumption transfers to each jurisdiction (t_{pj}), where they must treat every voter within a jurisdiction identically. These transfers can be thought of as government investments in local public goods, where for simplicity assume that all voters have the same preferences over goods.

An exogenous per capita tax levied equally on voters (τ) determines the total amount of transfers either party promises to distribute upon winning the election (where $\sum_j n_j t_{pj} = n\tau$). Since the empirical analysis considers the allocation of both post-election public investments and campaign spending, assume for simplicity that the campaign budget for each candidate is proportional to the transfer promised to their jurisdiction should he or she win. As is standard in models of redistributive politics, assume that candidate promises are credible. I provide evidence in Section 4.2 that this assumption is plausible in my empirical setting where both campaign patronage and subsequent investments in public goods by elected officials favor more competitive “swing” jurisdictions.

The timing of the game proceeds as follows. Each political party chooses a vector of transfers that maximizes the total number of votes they expect to receive in each jurisdiction, taking voter ideology and the attributes of individual candidates as given. After the transfers are announced, voters choose the party plus candidate package that will maximize their utility, taking the transfers as given. The candidates who receive the most votes win and implement their promised vectors of transfers. We will solve for the equilibrium of this political game through backward induction, beginning with the voter’s decision.

3.2 Voter Choice

In the L&W model voters care about consumption, which is determined by their exogenous post-tax income (ω) and the political transfers; and party loyalty (p_{pi}), which reflects their ideological preference or ethnic allegiance. To this I add candidate quality (q_{pj}), which captures the competence or charisma of the individual running for office. The utility of voter i in jurisdiction j if party p wins is additively separable in its components:

$$u(t_p, p_p, q_p) = v(\omega + t_{pj}) + p_{pi} + q_{pj} \tag{1}$$

⁴While the Lindbeck and Weibull (1987) model relates more directly to a single jurisdiction Presidential race, other theorists (for example, Grossman and Helpman 1996) have extended similar approaches to the case of multiple first-past-the-post races as one would see in Sierra Leonean Parliamentary elections.

where $v(\cdot)$ is a concave function capturing utility derived from consumption.

For each race, the two parties receive random draws from the common pool of potential candidates. I assume that relative candidate quality ($\Delta q_j = q_{bj} - q_{aj}$) looking across jurisdictions or within the same jurisdiction over time is normally distributed with mean zero and variance σ_q^2 . This assumption reflects the idea that the two parties have access to the same candidate recruitment technology, yet face some randomness in the actual characteristics of any particular candidate selected for a given race.

While voters know the transfers promised by parties and their own relative party loyalty ($\Delta p_i = p_{bi} - p_{ai}$), they only imperfectly observe candidate quality. Introducing this uncertainty on the voter's side allows me to explore the effect of information on voting choice and the equilibrium allocation of transfers. Specifically, each voter receives a noisy signal (θ_{ij}) that combines the true candidate quality difference with a mean-zero, normally distributed disturbance term:

$$\theta_{ij} = \Delta q_j + v_{ij} \text{ where } v_{ij} \sim N(0, \sigma_v^2) \quad (2)$$

Under Bayesian updating, voters form an expectation about which candidate is superior that weighs the content of the noisy signal against their prior beliefs. Since the distribution of relative quality is mean zero, all voters hold the prior belief that the two candidates are of equal quality. Given the signal, the expected quality difference favoring Party B is thus:

$$E(\Delta q_j | \theta_{ij}) = \delta \theta_{ij} + (1 - \delta) 0 \text{ where } \delta = \frac{\sigma_q^2}{\sigma_q^2 + \sigma_v^2} \quad (3)$$

Note that the weight placed on the quality signal (δ) depends inversely on the amount of noise in the signal, implying that voters place more weight on candidate quality when they have better information about candidate characteristics. Voters straightforwardly choose Party A if their party loyalty and the perceived candidate quality advantage favoring Party B are less than the consumption advantage they will enjoy under A :

$$\text{Vote A if : } \Delta p_i + \delta \theta_{ij} \leq v(\omega + t_{aj}) - v(\omega + t_{bj}) \quad (4)$$

3.3 Political Equilibrium

Now consider the perspective of political parties. In localities where voters are largely indifferent between parties (i.e. the differential Δp_i is small), promising a transfer that is even slightly larger than your rival's offer can swing a large number of voters toward your party. Thus we expect both parties to court jurisdictions where residents have weak underlying

party loyalties or ideological preferences. A key feature of the model is that parties cannot directly observe this individual loyalty factor, so treat the differential as a random variable in devising their investment strategies. For concreteness, suppose that both parties assume that underlying party loyalty (Δp_i) is normally distributed with jurisdiction-specific mean α_j and variance σ_p^2 .⁵ Thus the only factor that distinguishes one jurisdiction from the next is the mean of this bias distribution: jurisdictions with voters loyal to Party *B* have a positive value of α_j , while those with voters loyal to *A* have a negative value. In this way, each jurisdiction-specific density of party loyalty $f_j(\cdot)$ is a translate of a common normal density $f(\cdot)$, where the common density shifts further to the left or right as the expected party bias of voters inside a given jurisdiction becomes more extreme (i.e. $f_j(t) = f(t + \alpha_j)$). Since parties must treat every voter within a given jurisdiction identically, it is this expected bias of the jurisdiction overall that ultimately determines the amount of transfers allocated to a given area. In the U.S. context, parties estimate the loyalty of a jurisdiction by surveying its residents in pre-election opinion polls. In my empirical setting, the ethnic identity of a jurisdiction's residents serves as a strong predictor of its party loyalty.

Turning to the new quality term, suppose that parties know the distributions of candidate quality and the noisy signals, but have no information about their specific realizations. While zero information is clearly a simplification, this assumption captures the idea that parties are much worse at anticipating how voters respond to the personalities of individual candidates than they are at estimating partisan loyalties.⁶ Parties thus treat voter perception of candidate quality as a mean preserving spread of the estimated party loyalty distribution. From the parties' perspective the left hand side of the Vote *A* expression in Equation (4) is the sum of two normally distributed random variables:

$$\Delta p_i + \delta \theta_{ij} \sim F_j(\cdot) = N_j(\alpha_j, \sigma_\alpha^2) \quad \text{where } \sigma_\alpha^2 = \sigma_p^2 + \left(\frac{\sigma_q^2}{\sigma_q^2 + \sigma_v^2} \right) \sigma_q^2 \quad (5)$$

The key insight of the extension is that the variance of this distribution is increasing in the clarity of the candidate quality signal. This means that when voters have better information, they place more weight on individual candidate characteristics that are unobservable to parties, thereby making party forecasting of expected vote shares more uncertain. Note that defining the candidate quality signals as pure noise ($\sigma_v^2 \rightarrow \infty$ and hence $\delta \rightarrow 0$) generates L&W's original two factor model as a sub-case of the extended framework. Comparing the two models, the new quality term affects only the variance of the distribution of party preference and has no impact on the jurisdiction-specific means. As such, it does not substantively

⁵L&W refer more generally to the class of distributions that is unimodal and symmetric.

⁶An interesting extension for future work would be to endogenize candidate quality as another type of investment that parties make in trying to win close elections.

alter L&W's derivation of a swing voter Nash equilibrium, which I summarize below.

The assumed objective of political parties is to maximize the total number of votes they receive in each jurisdiction, subject to the budget constraint.⁷ From the perspective of Party A , it does so by choosing a vector of transfers that maximizes the sum of expected votes for A . Notice that the probability a voter chooses A is the probability that the random variable in (5) is less than the promised consumption utility differential. Party A thus maximizes this probability with respect to the public spending budget constraint:

$$\max_{t_{aj}} \sum_{i \in I_j} F_j [v(\omega + t_{aj}) - v(\omega + t_{bj})] - \lambda \left[\sum_j n_j t_{aj} - n\tau \right] \quad (6)$$

Party B solves a symmetric problem with respect to t_{bj} , with corresponding Lagrange multipliers denoted by μ .

Proposition 1 *Spending by competitive political parties in a given jurisdiction is decreasing in the expected loyalty or ideological advantage held by either party (denoted α_j). In the context of ethnic politics and decentralization, the swing voter theory implies that spending is decreasing in the population advantage (i.e. ethnic homogeneity) that favors one party over the other.*

To prove this proposition, let $t_j = v(\omega + t_{aj}) - v(\omega + t_{bj})$ denote the consumption utility differential in jurisdiction j . The first order conditions for Party A and B respectively are:

$$v'(\omega + t_{aj}) f_j(t_j) = \lambda \quad (7)$$

$$v'(\omega + t_{bj}) f_j(t_j) = \mu \quad (8)$$

The constant shadow prices indicate that gains in expected votes with respect to the marginal shifts in transfers should be equal across all jurisdictions. L&W prove that the ratio of these two scalars (λ/μ) holds constant (while exhausting the budget) only if each party promises the same amount to any given jurisdiction (i.e. $t_{aj} = t_{bj} = Y_j$ for all j). As a result, voter consumption is the same under either party (implying the consumption utility differential $t_j = 0$). Recall how the earlier translate assumption further allows us to rewrite each jurisdictional density as a function of the common density: $f_j(0) = f(0 + \alpha_j)$. This produces a general first order condition that highlights the fact that consumption transfers

⁷Lindbeck and Weibull 1987 show that the first order condition for the alternative objective of maximizing the probability of winning collapses to that of the plurality case if both parties are equally popular.

(Y_j) are ultimately determined by the prevailing loyalty to or ideological preference for one party over the other in the jurisdiction (α_j):

$$v'(\omega + Y_j) = \frac{\lambda}{f(\alpha_j)} \quad (9)$$

This condition yields the familiar empirical prediction that transfers from political parties are decreasing in the absolute value of expected party loyalty ($|\alpha_j|$), or that both parties favor “swing” jurisdictions where party affiliations are weakest. To see this, notice that the density $f(\cdot)$ falls in the tails, where α_j is large and positive (indicating a Party B stronghold) or negative (a Party A stronghold). In these areas, the right hand side of Equation (9) becomes large, and thus the value of Y_j in the left hand side must fall to trigger a corresponding increase in the marginal utility of voter consumption. We have thus shown that L&W’s central theoretical result continues to hold under the extended information model. The first contribution of this paper will be to provide a novel empirical test of their proposition in the context of ethnicity-based voting.

3.4 Information and Voter Choice

A second objective is to derive the effect of better information on voting behavior. Since in equilibrium the two parties promise the same vector of consumption transfers, the voter’s choice comes down to a tradeoff between party loyalty and the relative quality of the two candidates. Intuitively, where there is no information about candidate quality, voters never cross party lines: they know their own party preference and simply select the candidate affiliated with that party on the ballot. However, as better information becomes available, voters will cross over when confronted with an extreme draw from the quality distribution that favors the rival party’s candidate. Thus the willingness to vote across traditional loyalties should be increasing in information.

Proposition 2 *When the candidates for both parties are drawn from the same distribution, voters are more likely to cross party lines when they have better information about individual candidate characteristics. In the context of ethnic politics and decentralization, this implies that voters are more willing to cross traditional ethnic-party allegiances in local elections where they have better information about candidates.*

The proof of Proposition 2 is quite straightforward. Since voters are promised the same transfers from both parties, set the consumption differential in the right hand side of

Equation (4) to zero. The voter will thus choose Party A if the perceived quality advantage of candidate B is not large enough to outweigh the voter's party loyalty to A (recalling that $\Delta p_i = (p_{bi} - p_{ai})$):

$$\text{Vote } A \text{ if } : \delta\theta_{ij} \leq -\Delta p_i \quad (10)$$

From the voter's perspective, party preference is a perfectly observed scalar, while relative candidate quality is based on a random draw from the quality distribution. Considering the same voter over multiple elections, the probability that the voter chooses Party A in any particular election is thus:

$$\Pr(\text{Vote } A) = \Pr[\delta\theta_{ij} \leq -\Delta p_i] \quad (11)$$

This probability is the cumulative density function of perceived quality advantage (of candidate B over A) evaluated at the voter's own party preference (for party A over B). Recall that the distribution of perceived quality is normally distributed with mean zero and variance $\sigma_q^4 / (\sigma_q^2 + \sigma_v^2)$. Standardizing this distribution yields:

$$\Pr(\text{Vote } A) = \Phi\left(\frac{-\Delta p_i}{(\sigma_q^4 / (\sigma_q^2 + \sigma_v^2))^{1/2}}\right) \quad (12)$$

What this paper is specifically interested in is the willingness of voters to move away from their traditional party allegiances when they have better information. Crossing party lines—i.e. choosing a high quality candidate from the rival party—is a vote for Party A if the voter is Type B (i.e. $\Delta p_i > 0$) and a vote for Party B if the voter is Type A ($\Delta p_i < 0$). Thus for a Type B voter, the probability of crossing party lines is simply the $\Pr(\text{Vote } A)$ expression in (12), and the key question is how the amount of information available about candidate quality affects this probability. (The argument is symmetric for a Type A voter.)

Note that improving the quality of the signal (by reducing the noise $\sigma_v^2 \rightarrow 0$) increases the variance of the perceived quality distribution, as better information enables the voter to detect even subtle differences between candidates. Strengthening the signal thus increases the denominator of the argument in (12). Since the numerator for a Type B voter is less than zero, this increases the argument overall (by making it less negative). Because the CDF is increasing in its argument, we conclude that for a given level of party preference, improving information increases the probability that a voter will cross party lines in the ballot box.

3.5 Information and the Allocation of Political Transfers

The third objective is to derive how the quality of information available to voters affects the equilibrium redistributive strategy of competitive parties. As shown earlier, Proposition 1 implies that electoral pressures tilt the distribution of public spending away from areas where either party holds a popular advantage. Parties must estimate the underlying advantage—which is a combination of voter ideology and voter opinions of the relative quality of the candidate draws—based on what they know about voter preferences in a given jurisdiction. Proposition 2 further suggests that voters place more weight on quality (which is assumed to be unobservable to parties) where they have better information about candidates. This in effect makes the parties’ assessment of the underlying margin more uncertain, as it increases the weight on the component of advantage that from their perspective is a disturbance term. Greater uncertainty in turn induces parties to allocate campaign and patronage resources more evenly across jurisdictions. Taken to a logical extreme, if voters cared only about the candidate quality draws, parties would optimally divide the budget equally across all jurisdictions.

Proposition 3 *By making parties’ assessment of competitiveness more uncertain, providing voters with better information attenuates the slope of public spending with respect to the expected advantage held by either party. In the context of ethnic politics and decentralization, public spending falls less steeply with respect to the population advantage (i.e. ethnic homogeneity) favoring either party in local as compared to national elections.*

We are thus interested in proving that better information to voters attenuates the slope of party spending with respect to the expected partisan bias of jurisdictions. Considering the case where the expected advantage is positive (the case for negative is symmetric), recall that Proposition 1 simply states that spending in jurisdiction j is decreasing in partisanship. Applying the Implicit Function Theorem to the first order condition in Equation (9) generates a general expression for this derivative and one specific to our normal distribution case:

$$\frac{\partial Y_j}{\partial \alpha_j} = \frac{-\lambda \frac{\partial f(\alpha_j)}{\partial \alpha_j}}{v''(\omega + Y_j) f(\alpha_j)^2} = \frac{\lambda \alpha_j (2\pi)^{1/2}}{v''(\omega + Y_j) \sigma_\alpha \exp\left(\frac{-\alpha_j^2}{2\sigma_\alpha^2}\right)} \leq 0 \quad (13)$$

Note that this condition holds quite generally: $f(\alpha_j)$ is decreasing in its argument for any unimodal distribution; $v''(\cdot)$ is negative given the concavity assumption; and $f(\alpha_j)$ is positive by definition.

Providing better information to voters increases the variance of (adds more uncertainty to) the parties’ estimated distribution of advantage. Thus taking the derivative of expression

(13) with respect to the variance shows how spending changes when voters have access to better information about candidate quality:

$$\frac{\partial}{\partial \sigma_\alpha^2} \left(\frac{\partial Y_j}{\partial \alpha_j} \right) = \frac{-\lambda \left[\frac{\partial^2 f(\alpha_j)}{\partial \sigma_\alpha^2 \partial \alpha_j} f(\alpha_j) - 2 \frac{\partial f(\alpha_j)}{\partial \sigma_\alpha^2} \frac{\partial f(\alpha_j)}{\partial \alpha_j} \right]}{v''(\omega + Y_j) f(\alpha_j)^3} = \frac{-\lambda \alpha_j (2\pi)^{1/2} (\alpha^2 + 2\sigma^2)}{v''(\omega + Y_j) 2\sigma_\alpha^{5/3} \exp\left(\frac{-\alpha_j^2}{2\sigma_\alpha^2}\right)} \geq 0 \quad (14)$$

The sign of this expression depends on which term within brackets dominates (the signs on the other terms remain as above and are together a positive multiplier of the expression in brackets). The first two terms within the brackets are generally positive. Specifically, as the spread of a unimodal distribution increases, its density falls less quickly in response to any given change in its argument, implying that $\frac{\partial^2 f(\alpha_j)}{\partial \sigma_\alpha^2 \partial \alpha_j}$ is positive. For distributions that extend over an infinite range, this holds true everywhere save in the two extreme tails. This term is multiplied by $f(\alpha_j)$, which is positive by definition. Next consider the last two terms within the brackets, which are both generally negative. Specifically, in the center of the distribution, as the variance increases, the height of the density falls, implying that $\frac{\partial f(\alpha_j)}{\partial \sigma_\alpha^2}$ is negative. This term switches sign as one moves outward towards either tail. It is multiplied by $\frac{\partial f(\alpha_j)}{\partial \alpha_j}$, which is negative as mentioned above. In order for the entire expression in brackets to be positive everywhere, the first term must dominate in the center of the distribution, and the second term must dominate in the tails for distributions defined over an infinite range (both terms agree over the intervening area). For the normal distribution, we see that this is indeed the case, as the overall sign is unambiguously positive, indicating that supplying better information to voters attenuates the slope of party spending with respect to the underlying bias of jurisdictions.

Before continuing, consider how the intuition of Proposition 3 applies to the empirical setting of decentralization and ethnic politics. In national elections, voters know little about the candidates so they vote predominantly in accordance with their underlying ethnic-party loyalty. Even an extremely unbalanced quality draw would have little impact on their choice since voters cannot clearly perceive the differences between candidates. This implies that ethnic composition is a fairly certain predictor of competitiveness in national races and encourages parties to aggressively target their spending toward more ethnically diverse, and thus competitive, jurisdictions. By contrast, in local elections voters consider a number of different things they know about candidates—like how successful they were before they became a politician or their family’s reputation in the area—that are difficult for parties to observe, which makes local ethnic composition a far noisier predictor of competitiveness. Parties anticipate that an unbalanced quality draw could make a local race in even a fairly

homogenous stronghold area competitive, so smooth their transfer spending across a wider range of ethnic compositions.

4 Empirical Application

4.1 The Data

This section describes the variables and data sources used in the empirical tests of Propositions 1, 2 and 3. Specifically, it covers measures of party loyalty that use census data on ethnic composition and exit poll data on voting choices; an indicator variable capturing the extent of information available at the distinct administrative levels of local and national government; and estimates of political party spending from national survey data and government administrative records.

The empirical innovation of this paper is estimating the expected partisan bias of a jurisdiction based on its ethnic composition. Given the multiplicity of ethnic groups in Sierra Leone, the measure takes the absolute value of the sum of the population share of each ethnic group residing in the jurisdiction (π_{ej}) multiplied by the national partisan bias of that group toward Party *A* over Party *B* (α_e).

$$|E(bias)_j| = |\alpha_j| = \left| \sum_e \pi_{ej} \alpha_e \right| \quad (15)$$

Demographic data on ethnic composition comes from the 2004 National Population and Housing Census conducted by Statistics Sierra Leone. As mentioned earlier, Column 2 of Table 1 lists the expected party bias of each ethnic group, which is the national proportion of voters of that ethnicity who reported voting for Party *A* (the APC) minus the proportion reporting they voted for Party *B* (the SLPP or its splinter party the PMDC) in the 2007 Presidential election. Data on these reported votes come from two sources: exit polls and a national household survey. Regarding the former, the Decentralization Stakeholder Survey (DSS) exit polls were conducted by the Government of Sierra Leone’s Institutional Reform and Capacity Building Project (IRCBP) with financial support from the National Bureau of Economic Research. Designed by the author, these polls surveyed 1,117 voters in 59 randomly selected local government jurisdictions on Local Council Election Day in July 2008.⁸ The polls collected data on demographic characteristics and self-reported voting

⁸While the sample of jurisdictions is random, the selection of polling stations within jurisdictions in some cases was not. Due to logistical problems in conveying polling station assignments to enumerators in the field, enumerators in more remote wards out of mobile phone coverage did not receive their list of randomly assigned stations and likely visited more accessible ones. Also, one randomly selected station was too remote

choices for both the local and the earlier national elections. Similar voting questions were included in IRCBP’s 2008 National Public Services (NPS) Survey, which covered a nationally representative sample of over 6,300 citizens in 634 census enumeration areas (EA), where an EA is roughly equivalent in size to a village in rural areas (80 to 100 households) and a neighborhood in urban areas (100 to 120 households). As each source has its own advantages, the preferred measure of bias takes the average response across the two datasets.⁹ Results do not change qualitatively if we instead use a measure based on just one or the other data source. As a robustness check, results are re-run without reference to actual voting behavior by simply classifying each ethnic group as either pro-party *A* (bias = -1), pro-party *B* (bias = 1) or unaffiliated (bias = 0), and calculating expected bias as the absolute value of the difference in population shares of groups *A* and *B*: $|(ShrA - ShrB)_j|$. This measure yields similar results in magnitude and significance.

The difference in the amount of information available to voters is captured by an indicator variable, *LOC*, which equals one if the candidate or vote is for local office and zero if for national office. Since Section 2 demonstrates that voters have significantly more information about candidates in local elections, *LOC* = 1 signals the better quality information case. To provide some background on the different administrative levels, note that each local politician represents roughly 10,000 citizens living in one of the 394 local government jurisdictions, called "wards."¹⁰ Three or four of these Local Council wards nest neatly inside one of the 112 Parliamentary “constituencies,” which are the jurisdictions of a national politician. Thus when the analysis concerns a local candidate, I measure bias and spending with respect to the geographic area circumscribed by a ward (*j* indexes ward), and when it concerns national candidates, I refer to the somewhat larger area circumscribed by the constituency (*j* indexes constituency). Aggregating one step further, approximately eight constituencies sit neatly

to reach on Election Day and was replaced by a more accessible one.

⁹More specifically, bias is calculated as the average value of responses to two questions in each survey: party chosen in Round 1 and in Round 2 of the 2007 Presidential elections (where the NPS sample is limited to respondents who could verify their claim of voting by producing a voter identification card with the corresponding hole punches made by polling station staff). The advantage of the exit poll data is that respondents suffer no recall problems for their local choices as they were surveyed immediately upon leaving the polling station. The disadvantage is that the sample size is small and the individuals who chose to vote in the local races are a self-selected group smaller in number than those who vote in national races. In comparison, the sample from the household survey is much larger, however responses likely suffer recall problems and post-election re-evaluation of party support. Specifically, while extrapolating the national vote tally from the exit polls corresponds quite closely to the actual election results, extrapolating from the household data reveals a bias toward the winning Presidential candidate. Taking the mean across the two sources offers a compromise.

¹⁰In some urban areas outside the capital, the wards contain more citizens and are served by multiple Councillors. These multi-seat wards mean that there is a total of 456 individual seats, which is roughly consistent with the target of one Councillor per every 10,000 residents in a national population of just under 5 million.

inside one of the 14 districts, which are akin to states in the U.S. context. The district is the level at which local government operates, so each district is a distinct local government market with its own party committees and public spending budget.¹¹

Data on political party spending concerns two sets of outcomes: i) campaign spending by local and national candidates during the 2007 and 2008 elections, respectively; and ii) public investments made by the first cohort of elected Local Councillors over the period 2004-2007. The first set was collected in the community-level module of the 2008 NPS survey described above. Specifically, a focus group discussion with key opinion leaders elicited data on seven different measures of campaign spending by each local and national candidate: the distribution of cash, t-shirts, posters, handbills and food; personal candidate visits; and the hosting of a political rally. The unit of observation for this dataset is thus the candidate-community pair. Table 3 presents summary statistics for these campaign items. As some examples, Column 1 shows that an average community received three visits and \$3.62 from a typical candidate; and that candidates distributed t-shirts, passed out handbills and hosted a rally in about half of the communities they visited. Columns 3 and 4 show these statistics for local and national candidates separately, which reveal fairly similar patterns of patronage.

The second set of outcomes aims to connect the spending by candidates on the campaign trail to subsequent public investments by the winning politicians. For this, the Local Government Development Grants (LGDG) program, which was financed by the World Bank (90 percent) and Government of Sierra Leone (10 percent), provided several million US dollars in discretionary grants to the first cohort of Local Councils to spend on development initiatives within their districts. Information on the budgets and geographic location of funded projects comes from the Local Government Finance Department and the Decentralization Secretariat, who provide technical assistance to the Councils and manage the LGDG program.¹² Regarding the relative merits of these two datasets, note that while the LGDG public goods outcomes relate more directly to the model, they are only available for local

¹¹As a point of clarification, there are in fact 19 distinct Local Councils, which correspond to the 14 districts mentioned plus an additional 5 “city” councils representing small urban areas outside the capital that are surrounded by the larger rural council for that district. Since the political parties are organized at the district level, and candidates can move easily across the urban and rural areas in deciding where to run, I aggregate these “co-located” urban and rural councils together into unified districts for all campaign spending analyses. (Note that relaxing this aggregation flattens the slope of local as compared to national spending even further, and thus strengthens my main conclusions.)

¹²Linking these public investments to the campaign data encounters a time period disconnect: while ideally I would look at campaign spending and later investments by the *same* individuals, I have data only on *earlier* public spending by the first cohort of elected Councillors (who were campaigning in 2004) and *later* campaign spending by the second cohort of LC candidates (who have only recently begun to implement LGDG projects in their districts). The underlying assumption is that since different cohorts of candidates and elected officials are playing the same game under the same constraints, and ethnic-party bias is largely fixed over time, the pattern of targeting is stationary.

government as Parliamentarians have not had direct budgetary control over any comparable source of funds. Without a national government counterpart, this public investment data can only be used to test Proposition 1, and cannot directly test the effect of information on redistribution. By contrast, the campaign spending outcomes relate less directly to the model, but are available for both local and national candidates, and thus allow direct tests of both Propositions 1 and 3.

4.2 Investment across Jurisdictions

The first prediction is that political competition, and hence investments by political parties, will be decreasing in the expected underlying party bias of jurisdictions. Testing this proposition requires estimation of the following equation:

$$Y_{ij} = \beta_0 + \beta_1|\alpha_j| + \mathbf{\Gamma}\mathbf{X}_j + \mathbf{d}_j + \varepsilon_{ij} \quad (16)$$

where Y_{ij} is the investment on behalf of candidate i in jurisdiction j , $|\alpha_j|$ is the absolute value of the expected bias toward Party A of the jurisdiction, \mathbf{X}_j is a vector of jurisdiction-level factors that may also affect transfer levels, \mathbf{d}_j is a set of district fixed effects, and ε_{ij} is an idiosyncratic error term. The theoretical model predicts $\beta_1 < 0$ indicating that campaign spending and public investment are decreasing in the expected local advantage held by either party.

The first set of results concern outcome measures of campaign spending collected in the 2008 National Public Services (NPS) community module. While the equation-by-equation results provide several different estimates of how the allocations of specific campaign items (like the distribution of cash and t-shirts) respond to ethnic party bias, a single mean effects index is also included to provide a summary of how ethnic composition affects campaign investment overall. Following Kling and Liebman (2004), the mean index approach first translates each binary and continuous outcome into standard deviation units and then estimates the K distinct equations simultaneously using seeming unrelated regressions (SUR) system. The reported coefficient is simply the average of the K treatment effect estimates, with an estimated standard error that accounts for both the variances of each individual β_k as well as any covariances between β_k and β_{-k} . The second set of results concerns public goods investments by elected Local Councillors under the Local Government Development Grants (LGDG) program.

The vector of jurisdiction characteristics includes population density to control for urban/rural differences, and the population per seat to account for the fact that candidates are spreading their resources across differing numbers of voters. All specifications further

include fixed effects for the country’s 14 districts, which control for any extra-electoral value of particular geographic areas, for example the attractiveness of controlling the diamond mining areas in the East of the country. For the analysis of local spending, these fixed effects further demarcate the distinct local government markets and reflect the fact that each district-level government is a closed political market, with its own resources and budget. They also control for differences in the distribution of partisan bias within each local government area. To illustrate this latter point, Figure 1 plots the distribution of the raw expected bias for the jurisdictions inside each of the 14 districts and the country overall (represented by the X -axis itself). Note that the distribution of bias varies widely across districts, where some are located wholly inside one party’s national stronghold (like Kailahun or Tonkolili) and others cover areas where voters are all closer to indifference (like Kono). Within each local government, the model predicts that spending by local politicians should favor those jurisdictions with the lowest bias *relative to* the other jurisdictions in their district.

Before examining the regression output, Figure 2 nonparametrically graphs the relationship between campaign investment and the expected party bias of jurisdictions. To place spending by local and national candidates on the same scale, these graphs use a z-score approach that expresses expected party bias in standard deviation units. Specifically, the jurisdiction-level bias is first demeaned and scaled by the standard error of the distribution of bias in the relevant district (nation) for local (national) candidates. As predicted, the graphs reveal a clear downward sloping trend in investment with respect to bias for four of the five discrete outcomes considered. These refer, respectively, to whether or not the candidate distributed any t-shirts, posters, handbills, food or hosted a political rally in the locality during pre-election campaigning.

Table 4 presents the ordinary least squares results for campaign spending by national candidates only. Panel A uses the preferred measure of expected bias and presents a minimal specification without any jurisdiction-level controls. The coefficient on underlying party bias is negative for all seven outcome variables and statistically significant for six. Panel B presents the same specification yet with jurisdictional controls included. Inclusion of these controls hardly alters the estimates, where again all seven coefficients of interest are negative and six are statistically significant. Regarding interpretation, the coefficient on absolute expected bias in the first Column of Panel B implies that moving from a perfectly competitive jurisdiction where each party expects to win 50 percent of the votes to one that is expected to vote uniformly for one party is associated with candidates passing out 21 fewer US dollars during a typical community visit. This is a significant transfer in a country where gross national income per capita is only \$320 and average rural communities contain fewer than 50 households (World Bank 2008; Casey et al. 2010). Similarly, Column 2 suggests

that this move translates into candidates making three fewer visits to communities in the jurisdiction. Column 8 shows the mean effects indices, where the coefficient in Panel B implies that moving from a maximal to minimally competitive jurisdiction is associated with a 0.953 standard deviation unit decrease on average across the bundle of seven campaign goods, which is significant at 99% confidence. As a robustness check, Panel C presents results for the population share measure of bias that does not weight the strength of party loyalties by ethnic group. Here the coefficients reflect the difference in spending when moving from a perfectly competitive area where each party holds an equal population share to one that is completely homogenous. All estimates are comparable in magnitude and statistical significance.

Repeating the same series of specifications, Table 5 presents the campaign spending results for local candidates, which are similar yet somewhat less pronounced than the results for national candidates. In all three panels, all seven coefficients on expected bias are negative, and four are statistically significant. The mean effects indices again suggest that the average slope of campaign spending with respect to the underlying ethnic-party bias is again negative and highly significant. Specifically, the coefficient on the index in Column 8 of Panel B implies that moving from a maximally to minimally competitive local government jurisdiction, or ward, is associated with a -0.531 standard deviation unit average decrease in the bundle of campaign goods, which is significant at 99% confidence. As before, results are robust to the choice of expected bias measure.

Table 6 moves from campaign handouts to public spending by elected representatives, and provides suggestive evidence that investments in public goods also favor more competitive swing constituencies. Using the preferred measure of expected bias, Column 1 presents a minimal specification without jurisdictional controls while Column 2 presents results with the inclusion of ward-level controls. The coefficient of interest in Column 2 suggests that moving from a maximally to minimally competitive ward results in a \$19,577 reduction in public investment by the governing Local Council, which is significant at 95% confidence. Columns 3 and 4 repeat the same specifications using the robustness check population share measure of bias. These results reveal a similar pattern of coefficients, yet they are somewhat attenuated in magnitude and significance.¹³

¹³Note that all four specifications exclude wards located in City Council areas, which include: i) the 5 “co-located” urban councils that represent only 3 wards in a narrowly circumscribed geographic area and thus have little scope to target spending with respect to differences in ethnic composition; and ii) the national capital where available data contains little information about the geographic location of projects.

4.3 Information and Voter Choice

To test Proposition 2, we will exploit the difference in information available in local as compared to national elections. Since voters have less information about national politicians, the signal of relative candidate quality is likely noisier with respect to national as opposed to local candidates: $\sigma_{v,N}^2 > \sigma_{v,L}^2$. This in turn implies that the weight voters place on expected candidate quality is smaller for national elections: $\delta_N < \delta_L$. To test the hypothesis that information advantages make individuals more willing to cross partisan lines in voting for local candidates, this section estimates:

$$CPL_{vi} = \gamma_0 + \gamma_1 LOC_v + \mathbf{f}_i + \varepsilon_{vi} \quad (17)$$

The unit of observation is the vote, indexed by v , where there are two votes cast—one for local and another for national candidates—by each individual i . The outcome CPL indicates a vote that crosses party lines, or a vote for a party other than the one historically associated with the voter’s ethnic group as listed in Column 3 of Table 1 (I drop all respondents from unaffiliated ethnic groups). As an example, the outcome would equal one for a voter from the Temne ethnic group traditionally associated with the APC casting her vote for the SLPP candidate. LOC_v is an indicator variable signaling that the vote was for a local office, \mathbf{f}_i is a set of individual voter fixed effects, and ε_{vi} is the usual idiosyncratic error term. The voter fixed effects mean that the analysis compares how the same person votes at the two different levels of election, thereby controlling for all other observable and unobservable individual determinants of party choice. The coefficient of interest is γ_1 , which the theory predicts will be positive, indicating greater willingness to cross party lines for local candidates. Data for this specification comes from the 2008 DSS exit polls.

Column 1 of Table 7 shows that voters are indeed 11.3 percentage points more likely to vote for a party not traditionally affiliated with their ethnic group in local as opposed to national elections, a difference that is significant at 99 percent confidence. Columns 2 and 3 run the same specification for the ethnic groups affiliated with the each party separately. While the magnitude of effect appears larger for voters in the groups associated with the SLPP/PMDC (15.0 percentage points) compared to those in groups associated with the APC (8.0), the difference is not statistically significant (results not shown). These three estimates reflect a broad interpretation of voting against traditional loyalties that includes votes for minor parties and Independent candidates.¹⁴ As a robustness check, Column 4 narrows the interpretation of crossing party lines to only votes for the major rival and thus

¹⁴These findings hold despite the fact that there are more minor party and Independent candidates to choose from in national elections.

excludes voters who chose a minor party or Independent candidate in either election. This restriction reduces the magnitude of the effect to 5.0 percentage points as expected, but the coefficient remains statistically significant.

If better information encourages voters to place greater weight on individual candidate characteristics, they should also be more likely to split their ticket across candidates from different parties when voting for multiple offices simultaneously. The second half of Table 7 explores this possibility of choosing different parties when voting for Local Councillor and Council Chairman in local elections, and for Parliamentarian and President in national elections. Column 5 shows that voters are indeed 12.3 percentage points more likely to split their ticket across parties in local as compared to national races, which is again significant at 99 percent confidence. Implementing the same series of specifications as above, Columns 6 and 7 reveal an insignificant difference in the magnitude of the effect for the two sets of ethnic groups (13.9 for the SLPP-affiliated tribes versus 10.7 for the APC-affiliated tribes); while Column 8 shows that excluding voters who selected a minor party or Independent in any of the four races considered reduces the magnitude (to 7.6) but not the significance of the effect.

4.4 Information and the Allocation of Political Transfers

Testing Proposition 3 regarding the differences in redistributive strategies between local and national elections requires estimating the following equation on the pooled sample of spending by both local and national candidates:

$$Y_{ij} = \beta_0 + \beta_1|\alpha_j| + \beta_2LOC_i * |\alpha_j| + \mathbf{\Gamma X}_j + \mathbf{d}_j + LOC_i * \mathbf{d}_j + \varepsilon_{ij} \quad (18)$$

where Y_{ij} is the investment on behalf of candidate i in jurisdiction j , $|\alpha_j|$ is the absolute value of the expected bias toward Party A of the jurisdiction, LOC_i is an indicator variable that equals one if the candidate is competing for local office, \mathbf{X}_j is a vector of jurisdiction-level controls, \mathbf{d}_j is a set of district fixed effects, $LOC_i * \mathbf{d}_j$ is a set of local government fixed effects that define the 14 distinct local government markets for local candidates, and ε_{ij} is an idiosyncratic error term. As before, $\beta_1 < 0$ indicates that campaign spending is decreasing in the absolute value of the expected party bias. However the main coefficient of interest is β_2 , which the model predicts will be greater than zero, indicating that spending in local elections responds less strongly to ethnic-party bias than in national elections.

Regarding the two sets of fixed effects, the first (\mathbf{d}_j) allows the intercept of the investment line to shift up or down by district for both levels of election. This reflects factors like geography or the road network that affect local and national candidates similarly. For example,

rugged terrain creates higher transportation costs that mean campaign funds translate into fewer community visits in the mountainous Northern Koinadugu district than in the capital Freetown. Note further that this inclusion eliminates potential inter-district targeting by national politicians, thereby limiting analysis to the remaining variation within districts. The second set of local government fixed effects ($LOC_i * d_j$) delineate the distinct political markets that apply only to local candidates. These allow the budget intercepts of each district-level party committee to shift in response to differences in the local tax base that funds the spending of local candidates in that district. The reference group for this second set of fixed effects is the national budget that applies to all national candidates. This is important given that fiscal federalism uses transfers from central to local governments in part to increase the equity of resource allocation across districts (Oates 1999), which would automatically lead to a smoother allocation of spending by local as compared to national government. These local government fixed effects control for this phenomenon in the empirical analyses by allowing the intercept for each district-level budget line to shift independently for local candidates, as opposed to fitting a single (falsely flattened) line across all districts. These fixed effects further control for differences in the distribution of expected bias across districts shown clearly in Figure 2; and absorb any general differences between local and national candidates. Thus the evidence for Proposition 3 draws on a comparison of the average slopes of the local versus national intra-district spending lines, and will imply that national spending responds more strongly to ethnic diversity net of any differences in targeting across districts.

Table 8 presents results from the specification using district and local government fixed effects, where again Panel A excludes jurisdiction-level controls, Panel B includes them, and Panel C uses the robustness check population share measure. Supporting earlier results, the sign of the coefficient on the expected party bias term is negative for all seven outcome variables and statistically significant for six in all panels. This suggests that parties allocate greater campaign resources to low-bias swing jurisdictions, or those that do not have strong traditional ethnic-party allegiances. As predicted by Proposition 3, the coefficient on the interaction term between local election and expected bias is generally positive, indicating that campaign spending responds less strongly to differences in expected party bias based on ethnic composition for local elections. Specifically, in the minimal specification of Panel A, it is positive in five of the seven outcome equations and highly significant in one. In Panels B and C, the coefficient has a positive sign in six of seven outcome regressions and is statistically significant in two (one) when using the preferred (robustness check) bias measure. The mean effects indices are consistent with these individual outcome findings: the sign on the index for expected bias is negative and highly significant for all three specifications;

and the local interaction term is positive for all three, statistically significant in Panel B, and marginally significant in Panel C. In terms of interpretation, the negative coefficient on the expected bias index in Panel B implies that moving from a maximal to minimally competitive area results in a one standard deviation reduction in average campaign spending by national candidates. At the same time, the positive index coefficient on the interaction term implies that this slope is only half as steep in local elections. As expected, these results are consistent with the findings in Tables 4 and 5 that analyzed spending at each level—national and local—separately.

One may be concerned that local and national politicians are responding to omitted attributes of particular constituencies and that these features are in fact driving the results seen in Table 8. In response, the final investment specification includes fixed effects for all 112 Parliamentary constituencies nationwide (\mathbf{c}_j) to examine how the responsiveness of spending to bias varies across the level of election for the *same constituency*:

$$Y_{ij} = \beta_0 + \beta_2 LOC_i * |\alpha_j| + LOC_i * \mathbf{d}_j + \mathbf{c}_j + \varepsilon_{ij} \quad (19)$$

The new \mathbf{c}_j set of fixed effects controls for all other observed and unobservable characteristics that make particular constituencies more attractive for both political parties and migrants from different ethnic groups. They absorb the expected bias term, the vector of constituency-level controls and the district fixed effects in (18); however, the local government fixed effects still vary across local and national candidates within a given constituency, so remain in the regression. The coefficient of interest is again on the interaction between local election and the expected party bias of the constituency. While taxing on the data, this is the most rigorous test of whether the ethnic composition of a given constituency matters less in local than national elections.

Table 9 presents the results from the constituency fixed effects, where Panel A uses the preferred bias measure and Panel B uses the robustness check measure. The coefficient on the interaction between local election and expected party bias is positive in sign for all seven outcome equations and statistically significant for two using either measure of bias. It is marginally significant for one additional outcome when using the preferred bias measure. Reassuringly, the mean effects index is positive and highly significant for both measures. We thus conclude that the distribution of campaign spending by local as compared to national candidates responds significantly less strongly to ethnic composition.

5 Alternative Explanations

Beyond differences in the amount of information available, what other factors might explain the observed greater willingness of voters to cross party lines and the more equitable allocation of campaign resources in local as compared to national elections? This section explores potential alternative explanations that arise from other inherent differences between local and national politics, including the timing of elections, voter turnout, politician accountability, and ideology.

Since the local elections studied occurred several months after the national elections concluded, voters may have strategically chosen to align local representatives with the party that won control of the central government, thereby relaxing partisan loyalties in the subsequent local races. If this were the case, there should be systematically more crossing of party lines by the ethnic groups associated with the party that lost both its majority in Parliament and the Presidency in 2007, the SLPP. Yet comparing Columns 2 and 3 in Table 7, while the difference between the coefficients for crossing party lines in local races for the SLPP-affiliated tribes compared to the APC-affiliated tribes is indeed positive (6.94 percentage points), it is not statistically distinguishable from zero (with a standard error of 5.40). Thus strategic alignment between local and national representatives does not explain the reduced salience of party affiliation in local voting choices.

Voter turnout is significantly lower in local as compared to national elections, which could create a selection bias issue in the composition of voters or trigger a change in strategy for political parties. One immediate concern might be that the self-selected subset of citizens who vote in local elections take a more active interest in politics and are more willing to vote across party lines than the average citizen. However the individual voter fixed effects take care of this potential bias, by comparing how the same individuals behave in local versus national races. Turning to the parties' perspective, low turnout might mean that parties focus more resources in "getting out the base" for local races, spreading their campaign resources into more homogenous areas. While turnout does not figure directly in the model, so long as abstention rates are not correlated with party affiliation, differences in turnout would not change the identity of the most competitive jurisdictions and thus would not alter the predicted redistributive strategies of parties.¹⁵

By reducing the distance between citizen and state, decentralization may make the transfer promises of local politicians more credible or easier to hold to account and thus enable

¹⁵Furthermore, if party efforts to get out the loyal vote were successful, we should see a greater proportion of more partisan voters turning out in local races. This would then suggest fewer Independent candidates elected to local office, which contradicts the actual voting returns: while no Independents won national office, they won 4% of the local seats (National Electoral Commission 2007, 2008).

them to more effectively “buy” votes across ethnic lines. This would suggest that local candidates could offer a more attractive transfer package that persuades even quite partisan rivals to forego their ideological loyalties for greater consumption. While this is not inconsistent with the information story, the theoretical model predicts that both parties promise the same amount to each jurisdiction, so a credibility difference by level would not lead to a corresponding difference in the probability of crossing party lines.

Finally, suppose that ideology matters more or the party system is stronger in national politics. If true, voters could rely more heavily on parties to set the agenda they prefer and constrain the behavior of their elected national as compared to local representatives. In local races, voters would instead rely on the preferences or character of the individuals competing for office to ensure that they will enact their more favored policies if elected. This difference would similarly shift the focus from party to candidates in local elections, leading to less partisan voting, more uncertain vote shares and more equitable spending in local elections. While this is more difficult to rule out conclusively, it seems less likely to explain my results than the information differences documented in Section 2. Most importantly, there are not clear ideological differences between the two major parties in Sierra Leone: one is not more liberal and one more conservative; and they do not fall on opposite sides of key policy debates like the optimal size of government or social issues as they do in the U.S. While the district-level party committees may well be weaker—especially in terms of operating budgets—than their national counterparts, it does not appear that their ideological orientation plays a significant role in setting policy.

6 Conclusion

This paper provides evidence that politicians distribute more campaign goods and invest greater public resources in areas where electoral competition between parties is most intense. It further demonstrates how providing voters with better information about individual candidates relaxes their partisan loyalties. And, when citizens are willing to cast votes across party lines, politicians respond by attenuating their redistributive strategies in favor of a more equitable allocation of resources across jurisdictions. These three findings carry policy implications for the management of ethnicity-based politics and the relative merits of decentralized governance.

Adapting the swing voter theory to ethnic politics implies that more diverse jurisdictions, where neither party holds a population advantage, enjoy greater political patronage than their more homogenous neighbors. The idea that diversity creates political competition and thus attracts resources adds a new perspective to the literature linking ethno-linguistic

fractionalization to the provision of local public goods. Yet recent history shows that this kind of identity politics can also be destructive, violent and inefficient. In response, this analysis suggests that giving voters better information about candidates shifts the focus from party affiliation to individual competencies, and could thereby help diffuse ethnic tensions surrounding elections. Better information could further break a country out of the low accountability equilibrium in which citizens cast their votes blindly along partisan lines, generating no incentive for parties to recruit high quality candidates.

Finally, as decentralization brings government closer to the people, it enhances the amount of information available to citizens in electing their local as compared to national politicians. This information advantage implies that local politics and patronage may be less dominated by ethnicity- or partisan-based swing voter redistribution. An obvious limitation is that without knowing what aspects of individual candidates voters find attractive, one cannot make welfare statements about whether voting choices and political favoritism based on these "other" factors are any more or less productive than that based on partisan loyalty or ethnic identity. Yet in either case, the allocation of resources by local government remains more equitable than that by their national counterparts. Bringing these ideas together, this paper adds to the growing evidence that information plays a powerful role in politics, exerting profound effects on the behavior of both voters and their elected officials.

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Table 1: Expected Party Bias by Ethnic Group

Ethnic Group	Population Share (%)	Raw Bias	Party Affiliation
	(1)	(2)	(3)
Mende	32.2	-0.63	SLPP/PMDC (bias = -1)
Kissi	2.5	-0.50	SLPP/PMDC (bias = -1)
Sherbro	2.3	-0.25	SLPP/PMDC (bias = -1)
Mandingo	2.4	0.05	Unaffiliated (bias = 0)
Kono	4.4	0.06	Unaffiliated (bias = 0)
Fullah	3.7	0.17	Unaffiliated (bias = 0)
Susu	2.9	0.19	Unaffiliated (bias = 0)
Krio	1.4	0.43	APC (bias = +1)
Loko	2.6	0.68	APC (bias = +1)
Koranko	4.1	0.68	APC (bias = +1)
Yalunka	0.7	0.81	APC (bias = +1)
Temne	31.8	0.83	APC (bias = +1)
Limba	8.3	0.89	APC (bias = +1)

Notes on table: i) Column 1 lists the national population share of the ethnic group from the 2004 Population and Housing Census; ii) Column 2 estimates the raw bias of each ethnic group as the (Proportion of the ethnic group who reported voting for the APC) - (Proportion of the ethnic group who reported voting for the SLPP/PMDC) in the 2007 Presidential Elections, computed as an average value of four self-reports in the DSS and NPS datasets; and iii) Column 3 maps each ethnic group directly to a party based on a combination of historical accounts (Kandeh 1992) and author interviews with government officials.

Table 2: Self-Reported Primary Determinant of Vote Choice by Level of Election

Level of election:	Party is primary factor mean / (standard error)	Quality is primary factor mean / (standard error)	Difference across factors (Party - Quality)
	(1)	(2)	(3)
Local Council races (N = 1,091 LC votes)	0.345 (0.014)	0.355 (0.014)	-0.010 (0.025)
National MP races (N = 1,060 MP votes)	0.457 (0.015)	0.209 (0.013)	0.247** (0.024)
Difference across levels (Local - National)	-0.110** (0.031)	0.145** (0.032)	

Notes on table: i) significance levels indicated by + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$; ii) these are responses to the question "What was your first most important reason for choosing this candidate?" collected by the 2008 Decentralization Stakeholder Survey exit polls; iii) candidate quality includes the following responses: reputation / achievement in previous job; from same / nearby village; candidate is friend or relative; same religion; same secret society; candidate's gender; candidate's education; and helped me / my family before; and iv) the local - national differences are from regression analysis with individual voter fixed effects and robust standard errors clustered at the level of Local Council ward (the unit of sampling).

Table 3: Distribution of Campaign Goods Across Communities

Campaign Spending Outcomes	Mean value of outcome per community	Total number of candidate- community pairs	Mean value for local candidates only	Mean value for national candidates only
	(1)	(2)	(3)	(4)
Number of visits by the candidate	3.0	3,627	3.2	2.7
Amount of money distributed (in Leones)	10,855	4,176	7,305	14,557
Percentage that received any t-shirts	44.6	4,603	45.2	43.9
Percentage that received any posters	79.8	4,609	84.2	74.9
Percentage that received any handbills	41.7	4,600	42.1	41.1
Percentage that received any food	33.6	4,599	36.7	30.1
Percentage that hosted a political rally	47.0	4,574	52.3	41.2

Services Survey community module; and iii) the contemporary exchange rate was roughly 3,000 Leones to 1 US\$.

Table 4: Swing Voter Campaign Spending by National Candidates

Dependent variable:	Money	Visits	T-shirts	Posters	Handbills	Food	Rally	Mean Effects Index
	$\beta/(se)$	$\beta/(se)$	$\beta/(se)$	$\beta/(se)$	$\beta/(se)$	$\beta/(se)$	$\beta/(se)$	$\beta/(se)$
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: No jurisdictional controls								
Expected bias _c	-19.560** (5.760)	-3.017+ (1.534)	-0.589** (0.199)	-0.375** (0.102)	-0.238 (0.165)	-0.500* (0.216)	-0.395+ (0.215)	-0.846** (0.231)
Constant	57.316** (12.299)	4.763** (1.166)	1.012** (0.130)	1.032** (0.062)	0.974** (0.225)	0.699** (0.127)	1.033** (0.218)	-- --
Panel B: Including jurisdictional controls								
Expected bias _c	-20.693** (5.966)	-3.153* (1.576)	-0.700** (0.182)	-0.432** (0.107)	-0.223 (0.159)	-0.565** (0.202)	-0.496* (0.208)	-0.953** (0.218)
Constant	62.117** (14.841)	5.245* (2.048)	1.563** (0.255)	1.303** (0.157)	0.922* (0.369)	1.020** (0.229)	1.581** (0.353)	-- --
Panel C: Robustness check on bias measure, including jurisdictional controls								
(Share group A - share group B) _c	-17.192** (4.389)	-2.465* (1.164)	-0.533** (0.151)	-0.266** (0.092)	-0.151 (0.127)	-0.422** (0.153)	-0.413* (0.167)	-0.718** (0.177)
Constant	63.476** (14.521)	5.216* (2.010)	1.552** (0.268)	1.238** (0.167)	0.894* (0.379)	1.004** (0.232)	1.612** (0.362)	-- --
Number of observations	2,044	1,705	2,192	2,194	2,187	2,188	2,182	2,212

Notes on table: i) significance levels indicated by + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$; ii) robust standard errors clustered by MP constituency; iii) the unit of observation is the community-candidate pair; iv) includes fixed effects for the 14 districts; v) jurisdictional controls include population density and population per seat; vi) the money variable refers to cash passed out during community visits and is demarcated in US dollars; vii) Column 8 presents the mean effects index; and viii) bias and jurisdictional controls are measured for the geographic area defined by the MP constituency.

Table 5: Swing Voter Campaign Spending by Local Candidates

Dependent variable:	Money	Visits	T-shirts	Posters	Handbills	Food	Rally	Mean Effects Index
	$\beta/(se)$	$\beta/(se)$	$\beta/(se)$	$\beta/(se)$	$\beta/(se)$	$\beta/(se)$	$\beta/(se)$	$\beta/(se)$
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: No jurisdictional controls								
Expected bias _w	-0.210 (2.094)	-0.979 (1.135)	-0.593** (0.150)	-0.208** (0.074)	-0.170 (0.114)	-0.406** (0.136)	-0.616** (0.155)	-0.628** (0.152)
Constant	45.071** (11.814)	4.091** (1.027)	0.616** (0.146)	1.141** (0.051)	0.901** (0.162)	0.506** (0.074)	0.604** (0.101)	-- --
Panel B: Including jurisdictional controls								
Expected bias _w	-0.189 (2.103)	-0.845 (1.183)	-0.520** (0.136)	-0.183* (0.074)	-0.136 (0.122)	-0.322** (0.116)	-0.521** (0.142)	-0.531** (0.139)
Constant	45.002** (11.872)	5.649** (1.313)	0.719** (0.159)	1.217** (0.065)	1.000** (0.176)	0.587** (0.081)	0.632** (0.107)	-- --
Panel C: Robustness check on bias measure, including jurisdictional controls								
(Share group A - share group B) _w	-0.495 (1.489)	-1.149 (0.916)	-0.417** (0.097)	-0.123* (0.053)	-0.112 (0.081)	-0.248** (0.082)	-0.426** (0.099)	-0.435** (0.100)
Constant	45.213** (11.817)	5.938** (1.283)	0.687** (0.154)	1.190** (0.062)	0.994** (0.172)	0.573** (0.076)	0.621** (0.100)	-- --
Number of observations	2,132	1,922	2,411	2,415	2,413	2,411	2,392	2,424

Notes on table: i) significance levels indicated by + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$; ii) robust standard errors clustered by Local Council ward; iii) the unit of observation is the community-candidate pair; iv) includes fixed effects for the 14 districts; v) jurisdictional controls include population density and population per seat; vi) the money variable refers to cash passed out during community visits and is demarcated in US dollars; vii) Column 8 presents the mean effects index; and viii) bias and jurisdictional controls are measured for the geographic area defined by the Local Council ward.

Table 6: Swing Voter Public Investment by Elected Local Government

Dependent variable: Measure of bias:	2004-07 LGDG Spending in US \$ 000's			
	Expected bias w		(Share A - Share B) w	
	$\beta/(se)$ (1)	$\beta/(se)$ (2)	$\beta/(se)$ (3)	$\beta/(se)$ (4)
Bias _w	-31.073 (18.021)	-19.577* (8.745)	-19.665+ (10.557)	-9.155+ (4.327)
Population density _w		-1968.126 (3751.831)		-1990.103 (3782.314)
Population _w		0.001 (0.001)		0.001 (0.001)
Local Council HQ		169.452* (70.603)		169.803* (70.972)
Constant	25.710** (8.402)	2.021 (7.549)	23.802** (2.809)	3.231 (15.451)
Number of observations	330	330	330	330
R ²	0.03	0.40	0.03	0.39
District fixed effects?	Yes	Yes	Yes	Yes

Notes on table: i) significance levels indicated by + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$; ii) robust standard errors clustered by district; iii) the unit of observation is the Local Council ward; and iv) the sample excludes City Council wards (including wards within the 5 “co-located” urban councils that cover a very small geographic area and the national capital where the dataset contains little information about the geographic location of projects).

Table 7: Probability of Crossing Ethnic-Party Lines in Local versus National Races

Dependent Variable:	Cross Party Lines (%)				Split Ticket (%)			
	β /(se) (1)	β /(se) (2)	β /(se) (3)	β /(se) (4)	β /(se) (5)	β /(se) (6)	β /(se) (7)	β /(se) (8)
Local election	11.327** (4.039)	14.966* (6.193)	8.025+ (4.629)	5.009* (2.253)	12.343** (4.232)	13.937+ (7.039)	10.662* (3.856)	7.598** (2.582)
Constant	14.078** (2.020)	12.925** (3.097)	15.123** (2.314)	13.544** (1.127)	7.335** (2.116)	8.711* (3.520)	5.882** (1.928)	4.723** (1.291)
Number of observations	1,236	588	648	1,078	1,118	574	544	974
R ²	0.73	0.71	0.75	0.77	0.61	0.59	0.63	0.56
Individual FE?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SLPP-affiliated tribes included?	Yes	Yes	No	Yes	Yes	Yes	No	Yes
APC-affiliated tribes included?	Yes	No	Yes	Yes	Yes	No	Yes	Yes
Votes for minor parties included?	Yes	Yes	Yes	No	Yes	Yes	Yes	No

Notes on table: i) significance levels indicated by $+p < 0.10$, $*p < 0.05$, $**p < 0.01$; ii) robust standard errors clustered by Local Council ward (the unit of sampling); iii) the unit of observation is the vote, where there is one local and one national observation for every individual; iv) the sample of voters is restricted to those from ethnic groups affiliated with a party in Table 1 who reported their party choice in both the local and national elections (where “cross party lines” requires both of 2 votes and “split ticket” requires all of 4 votes); v) the sample of wards excludes multi-seat LC wards, where voters can choose candidates from multiple parties, and wards where one of the two rival parties did not contest the race (i.e. those missing either an APC or SLPP/PMDC candidate); vi) Columns 1 and 5 are the preferred specifications, which include voters from tribes associated with both parties and votes for minor parties and Independent candidates; vii) Columns 2 and 6 show results from the same specification but limit the sample to voters from the 3 tribes affiliated with the SLPP/PMDC, while Columns 3 and 7 show results for the 6 tribes affiliated with the APC; and viii) Columns 4 and 8 provide robustness checks that limit analysis to individuals who voted for one of the three major parties for all races considered, thereby excluding anyone who voted for a minor party or Independent candidate in either of the 2 (4) races of interest for cross party lines (split ticket) outcome.

Table 8: The Effects of Information on Swing Voter Redistributive Campaign Spending (with district and local government fixed effects)

Dependent variable:	Money	Visits	T-shirts	Posters	Handbills	Food	Rally	Mean Effects Index
	$\beta/(se)$	$\beta/(se)$	$\beta/(se)$	$\beta/(se)$	$\beta/(se)$	$\beta/(se)$	$\beta/(se)$	$\beta/(se)$
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: No jurisdictional controls								
Expected bias _j	-19.560** (5.759)	-3.017+ (1.534)	-0.589** (0.199)	-0.375** (0.102)	-0.238 (0.165)	-0.500* (0.216)	-0.395+ (0.215)	-0.883** (0.236)
Expected bias _j * Local candidate	19.350** (6.021)	2.038 (1.638)	-0.004 (0.168)	0.167 (0.109)	0.068 (0.174)	0.094 (0.157)	-0.221 (0.157)	0.261 (0.223)
Panel B: Including jurisdictional controls								
Expected bias _j	-20.192** (5.845)	-3.503* (1.616)	-0.707** (0.190)	-0.440** (0.107)	-0.261 (0.170)	-0.589** (0.209)	-0.492* (0.203)	-1.021** (0.233)
Expected bias _j * Local candidate	20.465** (6.345)	2.590 (1.761)	0.200 (0.173)	0.261* (0.119)	0.114 (0.188)	0.248 (0.164)	-0.037 (0.170)	0.490* (0.244)
Constant	60.013** (13.731)	7.493** (2.128)	1.582** (0.237)	1.335** (0.137)	1.104** (0.335)	1.134** (0.205)	1.569** (0.323)	-- --
Panel C: Robustness check on bias measure, including jurisdictional controls								
(Share A - Share B) _j	-16.550** (4.241)	-2.755* (1.174)	-0.534** (0.154)	-0.274** (0.093)	-0.184 (0.131)	-0.442** (0.156)	-0.407* (0.160)	-0.769** (0.184)
(Share A - Share B) _j * Local candidate	16.455** (4.648)	1.588 (1.217)	0.128 (0.128)	0.153 (0.094)	0.065 (0.148)	0.183 (0.123)	-0.022 (0.129)	0.340+ (0.186)
Constant	60.391** (13.400)	7.372** (1.987)	1.552** (0.242)	1.273** (0.144)	1.075** (0.336)	1.110** (0.198)	1.581** (0.320)	-- --
Number of observations	4,176	3,627	4,603	4,609	4,600	4,599	4,574	4,636

Notes on table: i) significance levels indicated by + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$; ii) robust standard errors clustered by MP constituency; iii) includes fixed effects for the 14 districts; iv) includes LOC*district fixed effects that define the 14 local governments; v) jurisdictional controls include population density and population per seat; vi) the money variable refers to cash passed out during community visits and is demarcated in US dollars; vii) Column 8 presents the mean effects index; and viii) for local (national) candidates the relevant geographic area j for expected bias and jurisdictional controls is the Local Council ward (Parliamentary constituency), where roughly four LC wards are nested within one MP constituency.

Table 9: The Effects of Information on Swing Voter Redistributive Campaign Spending (with constituency fixed effects)

Dependent variable:	Money	Visits	T-shirts	Posters	Handbills	Food	Rally	Mean Effects Index
	$\beta/(se)$	$\beta/(se)$	$\beta/(se)$	$\beta/(se)$	$\beta/(se)$	$\beta/(se)$	$\beta/(se)$	$\beta/(se)$
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Preferred bias measure								
Expected bias _c * Local candidate	17.549** (6.531)	1.516 (1.889)	0.095 (0.117)	0.044 (0.117)	0.219+ (0.124)	0.257** (0.082)	0.087 (0.105)	0.397** (0.133)
Constant	3.256* (1.533)	0.967* (0.388)	1.000** (0.000)	1.000** (0.000)	-0.000 (0.000)	0.117* (0.053)	1.001** (0.034)	-- --
Panel B: Robustness check on bias measure								
(Share A - Share B) _c * Local candidate	11.989* (4.826)	0.895 (1.268)	0.062 (0.086)	0.051 (0.079)	0.117 (0.083)	0.176** (0.061)	0.075 (0.082)	0.269** (0.092)
Constant	4.173* (1.843)	1.010* (0.445)	1.000** (0.000)	1.000** (0.000)	-0.000 (0.000)	0.131* (0.056)	1.010** (0.041)	-- --
Number of observations	4,176	3,627	4,603	4,609	4,600	4,599	4,574	4,636

Notes on table: i) significance levels indicated by + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$; ii) robust standard errors clustered by MP constituency; iii) includes fixed effects for the 112 MP constituencies; and iv) bias is measured for the geographic area defined by the MP constituency for all candidates (this abstracts away from any residual differences in bias across the 4 Local Council wards nested within the constituency).

Figure 1: Range of Jurisdiction-level Raw Expected Bias by District

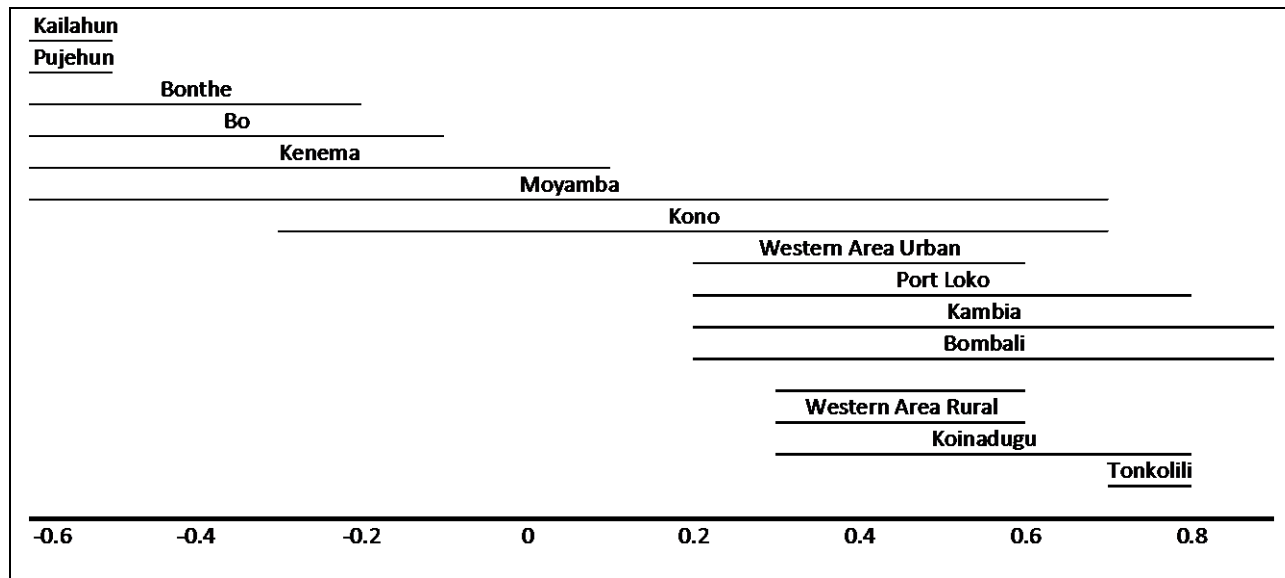


Figure 2: Nonparametric Mapping of Campaign Investments on Z-score of Expected Bias

