

# DEBATES:

## Voting and Expenditure Responses to Political Communication

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### Abstract

Candidate debates have a rich history, offer a unique communication forum, and are integral to contemporary campaign strategy. There is, however, little evidence on whether they affect actual voting behavior. The developing world offers an attractive testing ground, where the relative scarcity of information could amplify debate impacts. We controlled citizen exposure to debates in Sierra Leone and find positive effects on political knowledge, policy alignment, and votes cast. Participating candidates endogenously responded to our experiment by increasing campaign expenditure in communities where debate videos were screened in public gatherings. Debate participation enhanced the subsequent accountability of elected Parliamentarians, who allocated more public funds to development projects. A companion experiment parses the effects of information about policy versus candidate persona, and find that both matter. The results speak to the central political economy question of whether elections effectively discipline politicians, and show how political information—conveyed via candidate debates—can trigger a chain of events that ultimately influences policy. JEL codes D72, D83, O17.

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# 1 Introduction

Debates among candidates for public office have a rich history and offer a unique platform for candidates to communicate. The Lincoln-Douglas senatorial debates of 1858 are a famous early example in the United States. As distinct from other information sources, debates reveal the relative policy positions and competence of rival candidates, cover challengers in an equal fashion to incumbents, and convey comprehensive information ranging from concrete qualifications to more intangible attributes like persuasiveness and charisma. These features have led to some memorable, and highly influential, contests including the first televised presidential debates between Kennedy and Nixon in 1960, and between Mitterrand and Giscard in 1974 in France. More recently, the United Kingdom began broadcasting debates between Parliamentary party leaders in 2010.

Today debates constitute significant campaign events: large numbers of voters tune in to view them; they generate a flurry of media commentary and analysis of candidate performance; and pundits pore over polling data to assess their effects on public opinion (see for example, Shear [2012]). There is, however, no definitive evidence of whether debates have any impact on voter behavior. While the relevant literature is large (see Hellweg, Pfau and Brydon [1992] for review), it relies primarily on cross-sectional analysis of opinion polls with the familiar identification challenges (Prior [2012]).

In the developing world, debates are less common but arguably no less important. Indeed, the relative scarcity of political information creates scope for the effects of publicizing debates to be more pronounced, persistent, and directly linked to electoral outcomes. Allowing candidates to stand on equal footing and express their views on key policy issues could facilitate the election of more competent individuals. And, by creating a public record of pre-election promises, debates could ease candidate commitment problems and enhance the subsequent accountability of elected officials.

This paper evaluates these claims via an experiment that controlled citizen exposure to debates during the 2012 Parliamentary elections in Sierra Leone. We find that debates have strong direct impacts on voters, which trigger indirect effects on candidate campaign expenditure, and ultimately influence the performance of elected politicians.

We first show that debates had significant and substantial impacts on voter behavior, including vote choice. To capture these effects, we worked with a nonpartisan civil society organization to host, film, and disseminate debates in fourteen constituencies. We randomly allocated a “road show” across 224 polling centers that screened videotapes of the debates in large public gatherings in the five weeks leading up to the election. We find that watching debates led to higher political knowledge, including awareness of candidate qualifications

and policy stances; improved alignment between voter policy preferences and those of their selected candidate; and greater voter openness to candidates from all parties. Importantly, the gains in political knowledge translated into changes in votes cast, where we document a five percentage point average increase in vote shares for the candidates who performed best during the debates. The effect is positive and significant in both our exit poll data and in the National Electoral Commission’s official voting returns. In the context of historical ties between ethnic groups and political parties, candidates who debated well attracted votes from both loyalists and rival ethnic groups, leading to no net impact of debates on the incidence of ethnicity-based voting. Together these results document a high degree of voter responsiveness to information.

Consistent with theory, we next find an endogenous response by participating candidates who increased their campaign expenditure in communities where debate screenings were held. While candidates were not informed of which polling centers were assigned to receive screenings, such large public gatherings in rural areas would be fairly easy to track after they occurred. We find evidence that candidates increased their campaign effort, as measured by gift giving, the monetary value of gifts, and the number of in person visits, in communities where the screenings were held. The increase in expenditure is consistent with a “swing” voter investment model if the debates made exposed areas appear more competitive, either by making expected vote margins narrower or more uncertain.<sup>1</sup> This indirect impact of the experiment on the political market captures one set of interactions among agents that would contribute to a general equilibrium effect.

Our third set of results traces the effects of debates all the way to policy, where we find suggestive evidence that participation in debates enhanced the subsequent accountability of elected MPs. This longer term effect likely arises from two related channels: debates create a public and enduring record of candidate commitments, which makes renegeing on campaign promises more costly; and, by informing voters of these commitments and of the resources available to those elected, debates foster accountability pressure that enhances performance in office. To assess these effects, we tracked the performance of 28 elected MPs, half of whom had (randomly) participated in debates as candidates, over their first year in office. We find positive impacts on constituency engagement: for example, treated MPs held twice as many meetings with their constituents. We also find effects on the allocation of discretionary public funds controlled by MPs, where the value of development expenditures that could be verified in the field was 2.5 times greater for treated MPs. We find no evidence for effects on participation in Parliamentary sittings or on consistency in promoting the MP’s priority

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<sup>1</sup>See Lindbeck and Weibull (1987), Dixit and Londregan (1996, 1998), and Bardhan and Mookherjee (2010); and Casey (2015) for application to ethnic politics.

sector. While the small sample means that our results here are more speculative, the finding that debates can enhance accountability, even in areas where direct electoral pressure is limited, is important and particularly so for newer democracies.

To better understand what drives the initial response of voters to debates, we disentangle the influence of information conveyed about policy stance from candidate persona, and find that both matter. A series of individual treatments isolates the “hard facts” content, covering policy and professional qualifications that could easily be delivered in other formats, from the coverage of candidate charisma and persuasiveness that is specific to debates. Some voters watched brief “get to know you” videos of the candidates speaking informally about themselves and their hobbies, which capture persona but exclude policy. Others listened to a radio report or journalistic summary that articulated all the facts about policy positions and professional experience that arose during the debates, but conveyed nothing about persona. Still others watched the full debate on a tablet device. We find evidence that voters update their views of candidates in response to information regarding objective facts and personality, but that only debates move them into better policy alignment with candidates and trigger changes in vote choice. This suggests that while both policy preference and persona matter, the combination delivered by debates is more powerful than either factor in isolation.

We close the paper by considering four additional aspects of voter responsiveness to political communication. First, we document substantial survey priming effects on a narrow set of outcomes, where the survey experience alone accounts for one third of the overall effect on general political knowledge (consistent with Zwane et al. [2011]). Reassuringly, all our results hold net of priming effects. Second, we detect an immediate dissipation in knowledge gains over the days following debate screenings, but find no evidence that this decay intensifies over the weeks between the screening and the election. Third, we find little evidence for treatment effect heterogeneity, save that women acquire somewhat less political knowledge from debates than men. And fourth, we find larger effects of debates in the group screening versus individual viewing experiments. The divergence is consistent with social mobilization or common knowledge generation reinforcing the impacts of information, or with voters valuing the campaign response that tracked the group screenings. While smaller in magnitude, estimates for private viewing are otherwise similar, implying that debate exposure has direct effects on voter behavior net of any social mobilization or campaign effects.

In sum, these experiments speak to the central problem in political economy of whether elections work effectively as a disciplining mechanism for candidates and incumbent office holders. Our paper shows how political communication—specifically via interparty debates—can trigger a chain of events that begins with voters, flows through candidates, and ultimately

impacts policy.

The rest of the paper is structured as follows. Section 2 reviews the literature. Section 3 explains the institutional context, research design, pre-analysis plan, and econometric specifications. Section 4 discusses evidence for treatment effects on voters, candidates, and elected officials. Section 5 explores mechanisms. Section 6 concludes with policy considerations.

## 2 Related Literature

The question of communication in elections is obviously a large one. The literature concerning the impact of debates on voter opinion in American politics is extensive but inconclusive (see for example Jamieson and Birdsell [1990]). Much of this work is limited to cross-sectional opinion polls, where causal attribution is problematic. The experimental evidence is mixed: one study finds that televised debates impact voter assessment of candidates (Fridkin et al. [2007]); others find no meaningful effects on political attitudes (Wald and Lupfer [1978]) or opinions (Mullainathan, Washington and Azari [2010]); and two explore how the medium of delivery—via television versus radio—affects voter evaluation of candidates (McKinnon, Tedesco and Kaid [1993], Druckman [2003]). Our individual-level treatments delivered via tablet device contribute to this line of research by testing the impacts of debates in an information poor environment, unpacking voter responses to multiple different slices of information delivered by debates, and documenting effects on actual votes cast. The scale and intensity of the group screenings offers a new contribution.

Interestingly, the group screenings generated effects that are similar in magnitude, and yet more persistent, than those found for one-sided campaign advertising in wealthier countries. Gerber et al. (2011) document a six percentage point effect on voting intentions for the most intense “dose” of an incumbent governor’s televised campaign advertising in the U.S. These effects dissipated very rapidly, reduced to zero in a matter of days; whereas the impact of debates in Sierra Leone persisted over several weeks and affected votes on Election Day. In Italy, Kendall, Nannicini and Trebbi (2015) find comparably sized effects on vote shares resulting from a telephone campaign that delivered valence information about an incumbent mayor. That intervention was implemented during the week immediately preceding the election, a timing choice that reflects the fleeting nature of advertising effects. Such dilution of effect—via diminishing marginal returns to information or drowning out by the deluge of political commentary—are less likely in poorer countries with limited reach of mass media. In that regard, our results preview the role a more developed media could play in domestic politics in low income countries (see Stromberg [2015] and references therein).

In the field of development economics, our approach of working with political candidates

in the course of their actual campaigns follows in the tradition of Wantchekon and co-authors.<sup>2</sup> They find that public deliberation between a single party’s representative and constituents decreases the prevalence of clientelism and increases electoral support for the participating party in Benin and the Philippines. We instead focus on the interaction between rival candidates from different parties, where the head-to-head debates were designed to reveal information about the relative quality and policy differences between candidates. Information on the complete choice set straightforwardly helps voters identify the candidate associated with the highest utility level (in the tradition of Hotelling [1929]); and matters more if voting exhibits context dependence, where relative comparisons are also relevant (Callander and Wilson [2006]).

Testing the efficacy of debates also contributes to the literature exploring the impacts of information on voting. Ferraz and Finan (2008) and Banerjee et al. (2011), among others, show that providing specific information about incumbent performance and candidate qualifications can have large effects on voting. Debates are distinctive in that they provide more general and comprehensive information about candidates, including information about persuasion and charisma, which can be considered productive attributes of an effective legislator. Moreover, if no sufficient statistic of political competence is available, the generality of debates could further be important for three reasons. From a theoretical perspective, comprehensiveness eases concerns that increasing transparency along one dimension will simply reallocate politician effort towards those more observable actions, regardless of their impact on welfare (e.g. Liessem and Gersbach [2003] on multi-tasking, or Cranes-Wrone, Herron and Shotts [2001] and Prat [2005] on pandering). Pragmatically, it makes it harder for politicians to unravel the impact of the intervention: for example, it is easier for them to discredit a scorecard-style information campaign (Humphreys and Weinstein [2012]) than a video of their own public statements. And, by covering a range of issues and allowing candidates to make a positive case, debates may be less likely to backfire than single issue interventions, which have been found in some cases to depress turnout (Chong et al. [2015]) and increase vote buying (Cruz, Keefer and LaBonne [2015]).

Lastly, this paper contributes to the literature identifying the indirect effects of voter interventions on politician behavior. Our empirical results are consistent with theoretical predictions in Casey (2015), who argues that information provision increases voter responsiveness to candidate characteristics, which in turn creates uncertainty around party vote shares and attracts additional campaign expenditure. Our ability to test whether debates move the more specific outcome of voting across ethnic lines to support high quality rival party candidates is more limited, as in only one of the fourteen debates did the rival party

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<sup>2</sup>See Wantchekon (2003), Fujiwara and Wantchekon (2013), and Wantchekon et al. (2015).

candidate clearly outperform the locally popular one. The finding that the impacts of debates flow through voter behavior to ultimately impact policy echoes Fujiwara (2015), who shows how an improvement in voting technology changes the *de facto* composition of the electorate and leads to more redistributive policy in Brazil.

## 3 Context and Research Design

### 3.1 Institutional Setting and Experiments

Sierra Leone has 112 Parliamentary constituencies, which are single member jurisdictions elected by first-past-the-post plurality. The winning MP represents the local area, containing approximately 40,000 residents, in the national legislature. In these elections, the ethnic composition of voters in a given constituency predicts the corresponding party vote shares with remarkable accuracy. These correlations arise from historical ties between the All People’s Congress (APC) party and the ethnic groups in the North, most prominently the Temne; and between the Sierra Leone People’s Party (SLPP) and groups in the South, most prominently the Mende (see Kandeh [1992]). As an example of the contemporary strength of these loyalties, 89 percent of citizens in the control group of this study reported voting for the MP candidate from the party that is historically associated with their ethnic group. At baseline, respondents in study areas report that their primary source of political information is the radio (43%) followed by friends and family (33%). In this context, candidate debates remain rare but not unheard-of: Presidential debates were held before the 2007 and 2012 elections, however in no debate did both major party candidates participate. The dissemination vehicle studied in this experiment, via mobile cinema, was certainly novel.

Before the 2012 Parliamentary candidates were officially announced, we selected what we estimated would be the 28 most competitive races for inclusion in our constituency sample. While we used a variety of metrics to do this—including the 2007 vote margin, the ethnic-partisan bias favoring one party over the other, and whether the seat changed parties in the previous election—*ex post* these races ended up being neither the most nor least competitive in 2012 (see Appendix Figure A.1). The vote margins within our sample thus represent a broad subset (ranging from 0.14 to 0.75) of the national distribution (which ranges from 0.01 to 0.91). We then randomly selected 14 constituencies from this set, stratifying on the degree of ethnic-party bias, to host debates. All randomizations were done on a computer. Appendix Table A.1 compares characteristics of constituencies, candidates and winning MPs across treatment assignment, and shows that the randomization achieved reasonable balance.

Our civil society partner, Search for Common Ground (SFCG), invited candidates from

the three largest parties—the APC, SLPP, and the latter’s splinter party, the People’s Movement for Democratic Change (PMDC)—who were contesting a given seat to participate in a debate. No other parties won seats in the previous election, and these three parties respectively held 59, 39 and 9 percent of the seats in Parliament at the time.

Each of the fourteen debates followed a standardized format. The SFCG moderator opened the debates by introducing the candidates and explaining the basic roles and responsibilities of office. A casual “get to know you” section followed, where the candidates spoke informally about where they were from, their family and hobbies. Then five national policy questions were posed and each candidate was given two to three minutes to respond to each question. The first policy question concerned the candidate’s top priority for additional government spending. The second covered plans for spending the constituency facilitation fund (CFF), which is an untied 43.8 million Leones (approximately US\$ 11K) grant given annually to each MP. It is intended to support development projects in, and the MP’s own travel to and from, their constituency. The third asked for the candidate’s strategy to uplift the youth, where “youth” is defined by the government as 18 to 35 year olds. This demographic segment faces high unemployment and their historic disenfranchisement and frustration were seen by many as a contributing factor to the country’s civil war (1991 to 2002). Fourth was whether the candidate, if elected, would vote in favor of the Gender Equity Bill (GEB), a 30% quota for women’s representation in government that was introduced but never voted on by the previous Parliament. The last national policy question asked for the candidate’s assessment of the implementation of free healthcare (FHC), a major initiative by the incumbent government to provide free care to children under five and pregnant or nursing women. Each debate closed with two local policy questions, tailored to prominent issues in the host constituency. All debates were conducted in Krio, Sierra Leone’s *lingua franca*.

Within the fourteen constituencies selected for participation in the debates, we first allocated polling centers to the group screening treatment and control arms. All citizens had to register anew for this election, and the polling centers—typically a primary school or community center—are where they registered and later voted. This sample drew in 224 polling centers that had fewer total registered voters (471 on average) and were located further away from their nearest neighboring polling center (2.4 miles on average) than the population in general. SFCG took videotapes of the debates on a “road show” to 112 of these polling centers, selected randomly. In the eight constituencies where there were a sufficient number of polling centers left over, we randomly allocated 40 of the remaining larger and closer together centers into the individual-level treatment group. Note that the individual treatment arms were thus administered in a completely separate set of communities from the public screenings. A few months before administering any intervention or survey, we

conducted a household listing of registered voters in all 264 polling centers to develop the sampling frame for individual respondents.

The “road show” or mobile cinema treatment at the polling center level consisted of an evening showing of the video of the relevant debate projected at a convenient public place, usually on the side of the polling center itself, in the weeks leading up to the Election. Typical protocols for these screenings were as follows: host polling center and satellite communities were notified in advance and invited to attend the screening; 25 randomly selected residents (using data from the earlier listing exercise) were provided a small incentive (10 cooking spice cubes) to attend the screenings; the video was played once in a pause and play format that inserted translation into the relevant local language after each question; and the video was played a second time with or without translation. A secondary screening was also held in the largest accessible satellite community earlier the same day, in most cases without translation (85 in total). Overall, the mobile cinema visited one quarter of all polling centers in these fourteen constituencies. Since treated centers were smaller than average, and not everyone in the catchment area attended, the fraction of total registered voters who were directly exposed was substantially lower.<sup>3</sup>

At the time of screening in treated polling centers, some of the 25 respondents who received attendance incentives were also surveyed. Specifically: i) 12 respondents completed surveys both before and after the screening; ii) 4 completed only after screening surveys; and iii) the 9 remaining were not surveyed but were contacted only to deliver the incentive. We later conducted exit polls on Election Day and the days immediately after in all 224 treatment and control polling centers. To avoid any differential attrition or selection across treatment assignment, the 5,600 exit poll respondents were drawn from the original household listing in both treatment and control polling centers and surveyed at their residence. In what follows, we will thus be estimating intention to treat effects, where 82% of exit poll respondents indicated that they had attended a debate screening, as did 4% of those in the control group. The comparison of means across treatment assignment for voter characteristics in Appendix Table A.1 validates the polling-center-level randomization.

Within each of the polling centers assigned to individual-level treatments, households were divided into those with only female registered voters, only male, and both male and female registered voters (based on the earlier household listing exercise). We randomly assigned treatment arms to households within each of these bins, and randomly selected respondents within each household to receive the individual-level treatments and/or survey. The treatment arms at the individual level were as follows: (i) debate treatment, where individuals were shown the exact same debate screened in polling centers on a personal

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<sup>3</sup>A very rough estimate would be that 19,000 people attended a debate, or 6% of total registered voters.

handheld device; (ii) “getting to know you” treatment, where individuals were shown a short video of the same two candidates speaking informally about their hobbies and interests; (iii) “radio report” treatment, where individuals listened to a journalistic summary of the main policy positions articulated by the candidates during the debates; (iv) surveyed control, where individuals were given the same survey as the one that accompanied treatments i to iii, but were not shown any media; and (v) pure control, where individuals were not surveyed until Election Day, and whose only contact with the research team at time of treatment implementation was to record basic demographics. A sixth arm participated in a lab-in-the-field experiment (analyzed in our related work) that exposed voters only to photos and 20 second video clips of candidates to assess, for example, whether voters could infer candidate ethnicity from photographs. No other political information was conveyed and this arm is thus grouped with the controls.

We assigned 400 individuals per treatment arm and 600 to the surveyed control group. Unlike for the polling center level intervention, the exact same respondents who participated in the individual treatment arms were resurveyed in the exit polls. As we had perfect compliance and minimal attrition (6 percent overall), average treatment effect estimates for the individual treatment arms are comparable to treatment on the treated effects. Appendix Table A.2 presents voter characteristics, including attrition, across treatment arms, and validates that the individual randomization created reasonably balanced groups.

## 3.2 Hypotheses and Econometric Framework

We registered the first and main pre-analysis plan (PAP) governing this analysis with the Abdul Latif Jameel Poverty Action Lab on November 20, 2012 before fieldwork for the exit poll, our primary data source, was completed. We later migrated the PAP when the American Economic Association’s trial registry opened, where our entry can be found (<https://www.socialscisearch.org/trials/26>). With data collection efforts spanning 18 months, we established an iterative process for prespecifying our analysis. We started with an overarching plan and later lodged additional plans and revisions as one round of data and analysis informed the questions asked in subsequent analysis. The plans establish five research domains with hypotheses under each domain; group outcomes under these hypotheses; and specify the econometric framework including subgroup analysis, dimensions of heterogeneous effects, and which tests are one-sided and in which direction.<sup>4</sup> We also show results for more conventional two-sided tests, under conservative specifications that further exclude control variables, in Appendix Tables A.3 and A.4. We flag in the main text estimates that

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<sup>4</sup>See Casey, Glennerster and Miguel (2012) and Olken (2015) for discussion of PAPs.

fall from the 95% to 90% confidence level under these adjustments.<sup>5</sup>

The PAP provides a framework for adjusting for multiple inference in two ways. First we reduce the number of tests by estimating treatment effects for hypothesis-level indices. Following Kling, Liebman and Katz (2007) we construct a mean effects index that orients each individual outcome so that larger numbers imply better outcomes, translates them into standard deviation units with reference to the control group mean and standard deviation, and computes the equally weighted average of all transformed outcomes under a given hypothesis.<sup>6</sup> We report the per comparison, or “naïve,”  $p$ -value for all estimates, which are appropriate for any researcher with an *a priori* interest in the specific outcome or hypothesis presented. Second, we adjust standard errors across and within hypotheses. Following Anderson (2008), we apply family wise error rate (FWER) adjustments at the hypothesis level, which strongly control the probability of making any Type-I error; and apply false discovery rate (FDR) adjustments at the individual outcome level, which control the expected proportion of rejections that are Type-I errors. He notes that the former are quite conservative, as may be appropriate for assessing overall effectiveness and making policy decisions about scaling up implementation. We do not adjust across research domains (e.g. across voters in the group versus individual treatments), as each domain concerns a distinct sample: covering different agents, datasets and/or randomizations.<sup>7</sup>

The PAP lists the following hypotheses for the first research domain (A), which concerns the effects of the polling center-level debate screenings on voters:

- A1. Exposure to debates increases political knowledge and leads to more informed voting, including (i) general political knowledge; (ii) knowledge of individual candidate attributes; and (iii) candidate policy stances
- A2. Exposure to debates increases policy alignment
- A3. Exposure to debates increases vote shares for the candidate who performed the best in the debate
- A4. Exposure to debates increases the willingness to vote across party lines
- A5. Exposure to debates enhances voter openness to other parties

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<sup>5</sup>We estimate treatment effects for 55 individual outcomes concerning voters, candidates and politicians in Tables 2, 3 and 5. Thirty estimates have  $p$ -values less than 0.050 under our preferred specification. Of these, five estimates fall below the 95% confidence level when we remove controls and conduct two-sided tests, where the highest resulting  $p$ -value is 0.105.

<sup>6</sup>Missing values for index component measures are imputed at random assignment group means.

<sup>7</sup>Note the word “domain” often refers to different groups of outcomes tested on the same dataset. Our “domains” are quite distinct from that usage and imply a much stronger degree of separation between tests.

Secondary hypotheses: Exposure to debates (i) mobilizes the public and leads to greater turnout; (ii) increases the perceived legitimacy of elections; and (iii) increases interest in politics

Analysis of treatment effects for domain A takes the form:

$$Y_{ipc} = \beta_0 + \delta T_{pc} + \mathbf{X}'_{ipc} \boldsymbol{\Pi} + \mathbf{Z}'_{pc} \boldsymbol{\Gamma} + \mathbf{W}'_{ipc} \boldsymbol{\Psi} + c_p + \varepsilon_{ipc} \quad (1)$$

where outcome  $Y$  (e.g. vote choice) is measured for individual  $i$  registered in polling center  $p$  within Parliamentary constituency  $c$ ;  $T$  is an indicator variable equal to one if the polling center received the debate group screening treatment;  $\mathbf{X}$  is a vector of indicator variables that denote the stratification bin from which exit poll respondents were drawn (where the bins were constructed by age and gender);  $\mathbf{Z}$  is a vector of indicator variables that denote the stratification bin from which the polling center was drawn (where the bins were constructed by number of registered voters and distance to nearest neighboring center);  $\mathbf{W}$  is a set of individual controls determined by a pre-specified algorithm that uses control group data to select the subset of {gender, age, years of schooling, polygamous marriage, farming occupation and radio ownership}<sup>8</sup> that predicts the mean effects index for a given hypothesis at 95% confidence;  $c$  is a set of constituency-specific fixed effects (the level of debate and candidates); and  $\varepsilon$  is an idiosyncratic error term clustered at the polling center level. The coefficient of interest is  $\delta$ , which captures intention to treat effects. Unless otherwise stated, all tests are one-sided in the direction indicated in the statement of the hypothesis. The PAP further specifies the following primary dimensions of potential heterogeneous effects: (i) competitiveness of the constituency; (ii) candidate performance; and (iii) subgroup analysis by gender, age and fluency in Krio; which are discussed in Section 5.2.

For the second research domain (B), the PAP lists only one hypothesis concerning the effects of polling center-level debate screenings on candidates:

B1. Candidate allocation of campaign effort and expenditure is responsive to debate publicity

We are interested in whether campaign investment complements or substitutes for treatment allocation, and thus conduct two-sided tests. As mentioned earlier, if debates influence vote shares in a way that makes the races appear more competitive, then a “swing voter” model would predict greater resources flowing to areas where the debates were screened.

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<sup>8</sup>Interest in politics was removed from the pre-specified set as it is endogenous to treatment. While radio acquisition could conceivably follow from heightened interest, we find no evidence for treatment effects on ownership (see Appendix Table A.1).

Recall that while we did not inform the candidates of which polling centers were assigned to treatment or control, the screenings were large public events whose locations would not have been difficult to track after they occurred. As such B1 measures an endogenous response of candidates to the polling center-level treatment assignment. Treatment effects on voters in domain A thus capture the combination of exposure to debate and the campaign response. (By contrast, comparisons across the individual-level treatment arms under domain D below isolate a “pure” debates effect, net any campaign, survey priming, or social mobilization effects.) The econometric specification is the same as in (1), save the outcomes are linked to individual candidates: e.g., an outcome  $Y$  (such as receiving a gift) is measured for individual  $i$  in relation to candidate  $m$  where the individual is registered in polling center  $p$  within Parliamentary constituency  $c$ .

The PAP repeats the hypothesis above, only now applied to political parties more generally as opposed to individual candidates, to establish the third research domain (C). Data for this domain were collected in a community-level survey that accompanied the voter-level exit polls, implying that there are many fewer (by an order of magnitude) observations for this analysis than for domain B. Survey questions here do not distinguish gifts from different party representatives, and instead reference any party official or candidate for office, where the offices include President, MP, Local Councillor, and Local Council Chair, all of which were contested during the single General Election under study. The hypothesis covers additional outcome measures, like political rallies and number of posters displayed, that apply only at the community-level.

For the fourth research domain (D), we registered a separate PAP to govern the analysis of the individual treatment arms. The hypotheses and outcomes are the same as those specified for domain A above, but we are now interested in the absolute treatment effect of each of the three treatment arms (debate, get to know you, and radio report) compared to the control group, as well as the net or relative effect of each treatment arm compared to the other treatments. Analysis of individual-level treatment arms takes the form:

$$Y_{ihtpc} = \beta_0 + \delta T_{htpc} + \mathbf{X}'_{hpc} \boldsymbol{\Pi} + \mathbf{Z}'_{pc} \boldsymbol{\Gamma} + \mathbf{W}'_{ihtpc} \boldsymbol{\Psi} + c_p + \varepsilon_{ihtpc} \quad (2)$$

where outcome  $Y$  (i.e. vote choice) is measured for individual  $i$  living in household  $h$  assigned to treatment arm  $t$  registered in polling center  $p$  located in Parliamentary constituency  $c$ ;  $T$  is a dummy variable indicating assignment to treatment arm  $t$ ;  $\mathbf{X}$  is a vector of indicator variables that denote the stratification bin from which the household was drawn (where the bins were determined by the gender composition of registered voters); and  $\mathbf{Z}$ ,  $\mathbf{W}$ ,  $c$  and  $\varepsilon$  remain as defined in (1). For each treatment arm, the coefficient of interest is  $\delta_t$ , the average

treatment effect for treatment  $t$  compared to the control group. The control group is defined as respondents in both the surveyed and “pure” control arms as well as participants in the sixth lab-in-the-field arm (who received no political information). We further test a series of hypotheses about the relative effects of the different treatment arms that take the form  $\delta_t \neq \delta_{-t}$ . Tests of average treatment effects are one-sided in the direction of the hypothesis statement, and tests of relative effects are two-sided.

The fifth and final research domain (E), explores medium term accountability effects of the debate treatment on the candidates who won the seat. This analysis operates at the highest level of aggregation, where we randomly allocated 14 of the 28 constituencies into debate participation. We surveyed all candidates in the sampled constituencies pre-election, surveyed the 28 winning MPs shortly after the election, and tracked the performance of the winners over their first 18 months in office. During the post-election survey, we also gave the treated winners a video of the debate they participated in, edited to include only their own statements, and explained how many voters had seen their debate. Performance outcomes for all 28 winners were drawn from Parliamentary administrative records, MP self-reports, and extensive fieldwork in their home constituencies. There are four hypotheses in this domain:

- E1. Accountability pressure of constituent exposure to debates is expected to increase the activity and engagement level of elected MPs
- E2. The publicity of the debates helps solve the candidate commitment problem and makes their post-election behavior in Parliament more consistent with their pre-Election promises
- E3. Accountability pressure of constituent exposure to debates is expected to increase post-election engagement with constituents
- E4. Accountability pressure of constituent exposure to debates is expected to increase development expenditure under the CFF

The econometric specification here is:

$$Y_{ic} = \beta_0 + \delta T_c + \mathbf{X}'_i \boldsymbol{\Pi} + \lambda_c + \varepsilon_{ic} \quad (3)$$

where  $Y_{ic}$  is outcome for MP candidate  $i$  who won the seat for constituency  $c$ ,  $T_c$  is an indicator signaling that the constituency was assigned to the debates participation treatment,  $X_i$  is a vector of MP-level controls {gender, public office experience} selected by their contribution to increasing the  $R^2$  in analysis of the control group data, and  $\lambda_c$  are fixed effects for the randomization strata used in the constituency-level assignment (three bins of raw ethnic-party bias). Tests are one sided in the direction of better performance. Given the

small sample at this level, standard error estimators that are robust to heteroskedasticity are likely downward biased. To reduce this bias, we present standard errors that are the maximum value of conventional ordinary least squares and bias corrected HC<sub>2</sub> estimators in MacKinnon and White (1985), following discussion in Angrist and Pischke (2009). We do not have power to adjust for multiple inference in this domain.

As referenced above, we in total lodged three PAPs and two updates in an iterative process that tracked the sequential analysis of the many datasets we collected. The important thing to note is that the hypotheses and outcome measures for domains A, B, C and D were all established with the first plan in November 2012 before collection of the primary data, the exit poll, was completed; and those for domain E were lodged in June 2014 before the constituency-level fieldwork tracking the activity of winning MPs was completed. Building on these, one additional plan sets out the mechanisms related to the individual treatment arms analysis; one update transparently records revisions to the first polling center-level PAP as analysis of earlier data collection efforts refined plans for subsequent analysis; and one update refines the specific indicators for elected MPs in domain E after analysis of the control group data. All revisions are documented in the online appendix and AEA registry.

There are three substantive revisions to the first PAP worth noting here. First, we “demoted” the hypothesis about effects on turnout from primary to secondary after official election results were published revealing very high (87.3%) turnout rates, implying that we would have limited power to detect treatment effects. Second, we combined two hypotheses in the initial plan—policy alignment and policy persuasion—into one single hypothesis, as they capture different mechanisms leading to the same observable outcomes.<sup>9</sup> Third, we added analysis of survey priming. Its earlier omission was a simple oversight as the original research design explicitly includes surveyed and pure controls in order to capture these effects. Throughout the rest of the paper, we clearly indicate analyses that were not pre-specified and should be thus considered exploratory rather than confirmatory in nature.

## 4 Estimated Treatment Effects by Research Domain

### 4.1 Effects of Debate Group Screenings on Voters (Domain A)

Overall we find strong positive effects for four out of the five primary hypotheses concerning the impacts of the mobile cinema road show on voter behavior (Table 1). These suggest that debates increased political knowledge, moved voters into better policy alignment with their selected candidate, increased vote shares for candidates who performed the best during

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<sup>9</sup>Having two hypotheses covering the exact same set of outcomes in the original PAP was clearly a mistake.

the debates, and enhanced voter openness to participating candidates. Treatment effect estimates for these four hypothesis-level indices are significant at above the 95% confidence level when considered on their own, and remain above 90% confidence under conservative FWER corrections. For the remaining hypothesis, we find that while voters moved back and forth across ethnic-party lines to support strong debate performers, this had no net effect on the overall incidence of ethnicity-based voting.

More specifically, for our first hypothesis, Table 1 suggests that watching debates increased the mean effect on political knowledge by 0.281 standard deviation units (standard error 0.028) across the 20 individual outcomes included. To give a better sense of magnitude and substantive content, Table 2 unpacks this index into its component measures in three broad areas (Panel A1). For the first—general political knowledge—we see that the proportion of voters in control polling centers who could correctly state the amount in the constituency facilitation fund (CFF) was only 0.034 or 3.4%, even with answers coded to correct for a generous range around the actual 43.8 M Leone figure (row 1). The treatment effect estimate of 0.140 (s.e. 0.018), or 14 percentage points, indicates that the proportion of voters who knew the amount in the CFF increased fivefold with exposure to treatment. Voters also learned about public entitlements: the proportion who knew who was eligible to receive free healthcare increased by 5.6 percentage points (s.e. 3.3) on a base of 70.6%; and the proportion who knew how many seats the Gender Equity Bill would reserve for women increased, but not significantly so. Voters also learned what elected officials were meant to do in office: the number of correctly reported roles and responsibilities of an MP increased significantly. The statistical strength of these results is largely unchanged when we adjust  $p$ -values to control the false discovery rate (FDR) across all 33 primary plus 5 secondary outcomes within domain A (column 5).<sup>10</sup>

The next set of outcomes under political knowledge concerns voter awareness of specific candidate attributes. Here we again find strong positive treatment effects, which are significant at greater than 95% confidence for 6 of the 7 outcomes measured (demarcated by (ii) in Panel A1). For example, the proportion of voters who could infer which candidate was better educated rose from 24.3% to 40.2%, and the proportion who knew which candidate (if any) had been an MP in the past increased from 49.0% to 60.1%, both significant at 99% confidence. Voter knowledge of the candidates’ public office experience and ability to name candidates from all three parties also increased significantly.

For the third and final area of political knowledge, we find evidence that voter knowledge

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<sup>10</sup>This adjustment across all outcomes within domain A is actually more conservative than what we specified in the PAP, which was to adjust only across outcomes within each of the five hypotheses. While the FDR adjustments generally inflate  $p$ -values, for knowledge of the GEB quota and some other larger  $p$ -values they adjust downwards, which can be expected when there are many true rejections in the test set.

of candidate policy positions increased markedly. For each of (up to) three participating candidates, on each of three national policy issues,<sup>11</sup> voter ability to correctly place the candidate on the specific policy spectrum increased significantly (at 99% confidence) for 8 of 9 estimates. As some examples, the proportion of voters who could correctly identify the SLPP candidate’s first priority for government spending doubled, from 14.2 to 29.1%; the proportion who knew the APC candidate’s view on whether free healthcare was being well implemented or needed to be significantly reformed rose from 25.2 to 44.9%; and the proportion who knew whether the PMDC candidate would vote in favor of the gender equity bill (GEB) rose from 24.4 to 45.3%.

Together, these results suggest that exposure to debates led to substantial improvements in voter knowledge. Recall that respondents experienced a one to five week lag between exposure to debates and the exit polls, indicating that these gains in knowledge were relatively persistent. The next natural question is whether these knowledge gains translated into changes in voting choices on Election Day.

Voters acted on the gains in policy knowledge to move into better policy alignment with their chosen candidate (Table 1, second row). Alignment is measured as a match between the voter’s reported policy position in the exit poll and that of the candidate they voted for as expressed during the debate. Estimates suggest that debate exposure increased policy alignment by 0.106 standard deviation units (s.e. 0.035) on average across three national policy issues discussed during the debates. This effect is significant at 99% confidence for both per comparison and FWER controlled  $p$ -values. To provide a sense of magnitude, consider the results in Panel A2 of Table 2. The empirical match between the voter’s first priority issue and the view articulated by their chosen candidate during the debate increased by 9.0 percentage points (s.e. 3.1) on a base of 42.5%. We find similar effects for free healthcare, where alignment increased by 9.2 points (s.e. 3.5) on a base of 39.4%. We find no effect for the gender equity bill, although note that there was little divergence in views expressed by candidates during the debates (only two candidates voiced strong objection to the bill).

What drives this improvement in policy alignment: choosing candidates based on previously determined policy preferences, or changing policy positions based on comments from the candidates? Using priority sector as an example, alignment improves if: i) voters who prefer education select a candidate who also supports education; and/or ii) voters update their view that education is the most important sector after observing their preferred candidate advocate for education. The former is what one would expect from canonical proximity

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<sup>11</sup>To keep the exit poll short, we selected only 3 of the 5 national policy issues discussed in the debate for inclusion on the survey.

voting models, originating with Hotelling. By contrast, Abramowitz (1978) suggests that the latter was at work in the Carter-Ford Presidential debates of 1976, where voters adopted their previously preferred candidate’s view on unemployment policy after watching the two candidates debate the issue. Lenz (2009) further argues that these effects are concentrated among voters who learned the candidates’ positions from the debate. We find evidence that both channels are likely at work.

We have no pre-treatment data on policy preferences for the control group, so to identify these channels we split our sample into party stalwarts, who are most likely to change their policy view to match their preferred candidate’s position, and flexible voters, who have crossed party lines in the past and may be more likely to choose candidates based on policy. We define stalwarts as those who voted for their ethnically aligned party in all of the other elections for which we collected vote choice: 2007 Parliamentary, 2012 Presidential and 2012 Local Council.<sup>12</sup> For these voters, alignment increases by 12.2 points (3.5) for priority issue and by 11.2 (4.1) for healthcare, suggestive of position updating. Flexible voters are those who voted across ethnic-party lines in at least one of these three other elections. We find very similar results: among voters who have demonstrated willingness to vote for the rival party, alignment improves with treatment by 9.8 percentage points (4.6) for first priority issue and by 11.2 (4.0) for healthcare, suggestive of selecting candidates based on policy. Note however that the party stalwarts represent a much larger share of the study sample (72% compared to 15%)<sup>13</sup> suggesting that position updating is the more empirically substantive channel.

The treatment effect of ultimate interest is on the third hypothesis, where we find significant positive impacts on votes cast for the candidate who performed best during the debates. Estimates for the mean effect index in Table 1 suggest an increase of 0.086 standard deviation units (s.e. 0.043), significant at 97% confidence on a per comparison basis and 92% confidence under FWER adjustment. This index compiles two measures of debate performance: one determined by the audience and another by our expert panel. Audience judgments were recorded in a survey that immediately followed the implementation of the group-level screening. The expert panel consists of twenty five members of government and civil society who watched the debate videos and scored candidate responses to each debate question. These two sets of evaluations coincide on who performed best in 10 out of the 14 debates. Where they diverge, the expert panel was more likely to pick a less popular candidate, including one from the PMDC, the smallest party that was not very competitive in this election (they won zero seats nationwide).

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<sup>12</sup>We ignore current MP 2012 choices as these may have been affected by the debate treatment.

<sup>13</sup>The remaining 12% represents voters from ethnic groups not strongly affiliated with either party. These voters do not appear to move into policy alignment via either channel.

Table 2 reports treatment effects for these two measures in our exit poll data (primary test) in Panel A3, and in the National Electoral Commission’s (NEC) official polling-center level returns (secondary test) at the bottom of the table.<sup>14</sup> The correlation between party vote shares measured across the two datasets is 0.93 for the APC and 0.92 for the SLPP, suggesting that misreporting of vote choice in the exit polls is not a major concern. All four treatment effect estimates for votes for the debate winner are positive, and three are significant at 95% confidence. The estimate that is largest in magnitude is for votes for the candidate that audience members judged to have performed best, measured in the exit poll data, where we see a 4.9 percentage point (s.e. 2.1) increase in votes for the debate winner. As a benchmark, this is comparable to the estimated incumbency advantage of American state legislators (Ansolabehere and Snyder [2002]). The corresponding estimate using the official NEC returns is 3.5 percentage points (s.e. 1.7). While the two are not statistically distinguishable from each other, it makes sense that the point estimate in the NEC data is smaller, since the returns include votes from peripheral villages not exposed to treatment.<sup>15</sup> Note that vote shares for these candidates were already high, at 71% in the NEC returns for the control polling centers, indicating that in this set of constituencies, the candidate who was locally popular tended to also perform best during the debates.

We find no evidence that these shifts in vote shares translate into any net impact on the prevalence of voting across ethnic-party loyalties. In Table 1, the coefficient for the mean effects index for hypothesis A4 is small in magnitude and not statistically distinguishable from zero, as are all three estimates for the associated individual outcome measures in Table 2. How can we reconcile a five percentage point shift in votes toward the debate winner, with no commensurate change in voting along ethnic lines? First, note that a move toward the debate winner only crosses party lines if the voter is from a rival ethnic group. Voters traditionally loyal to the debate winner should neither change their vote nor cross ethnic lines after exposure. This is what we see in the data. For historically aligned voters, there is no treatment effect (1.6 percentage points, s.e. 1.4) of watching the debate on their vote choice, as presumably they were already planning to vote for that candidate. These voters constitute 81% of the study sample and had baseline rates of 90% voting for the aligned

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<sup>14</sup>The NEC sample excludes one constituency where the SLPP candidate was disqualified immediately before the Election but his name remained on the ballot. A full 48% of ballots cast were deemed invalid (many of which were likely SLPP votes). The winner was eventually determined via the courts. Treatment effect estimates remain largely unchanged when this constituency is included (0.032, s.e. 0.016\* for audience best and 0.032, s.e. 0.015\* for expert best, N=224).

<sup>15</sup>Our PAP commits to showing estimates when including an additional 29 “pure” control polling centers located in 3 of our constituencies that were randomized out of our study sample. As we defined the randomization strata after their exclusion, which was a mistake, we must alter the main specification somewhat to include these extras. Treatment effect estimates remain similar with their inclusion: 2.8 percentage points for both votes for audience and expert best, with one-sided p-values of 0.077 and 0.073, respectively.

candidate (i.e. debate winner) in the control group. By contrast, voters from ethnic groups historically affiliated with the rival party (i.e. the candidate running against the debate winner), represent only 7% of the sample and had a much larger treatment effect estimate of 10.6 percentage points (s.e. 7.5), which is significant at 92% confidence in a one sided test.<sup>16</sup>

Second, we should expect more votes to move toward the debate winner where the rival party candidate strongly outperforms the local favorite. Consistent with this, for the subsample where the audience deemed that the “outsider” candidate (who received only 26% of votes in the control group) won the debate, the treatment effect on votes for the winner is four times larger than in the full sample (19.1 percentage points, s.e. 11.0, N=381) and significant at 94.8% confidence in a one-sided test. Thus the effects on switching one’s vote to the debate winner are concentrated in “upset” contests and among voters historically affiliated with the rival tribe, consistent with the model in Casey (2015). Both of these subsamples, however, are small. This reflects the failure of our pre-election estimation to select (*ex post*) the most competitive races, creating a sample of races more advantaged toward the locally popular candidate than we anticipated. As a result, tests for these subgroups are both underpowered and not pre-specified, so consider them exploratory in nature.

Estimates for the fifth and final hypothesis suggest that exposure to the debates enhanced voter openness to candidates from all participating parties. In Table 1, we see that the treatment effect for the mean effect index is 0.091 standard deviation units (s.e. 0.048), significant at 97% confidence based on unadjusted *p*-values and 92% confidence based on FWER adjusted *p*-values. This index compiles information from 10 point likeability scales, where all five treatment effect estimates in the individual outcomes are positive (in Table 2) and one is statistically significant at conventional levels. While clearly voters updated more positively for some candidates than others, the fact that their opinions rose across the board is an important result for securing candidate participation in future debates.

Results in domain A are fairly robust to excluding control variables and conducting two-sided tests. Comparing the estimates above to the “raw” results in Appendix Table A.3, of the 23 individual treatment effect estimates that are significant at 95% confidence in Table 2, only 3 fall to the 90% confidence level. These are for knowledge of free healthcare eligibility and the two (secondary) measures of votes for the debate winner in the NEC data. Two of the mean effect indices in Table 1—votes for best and voter openness—similarly fall from 95 to 90% confidence when the control variables are dropped and two-sided tests are used.

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<sup>16</sup>The remaining 12% of the sample are composed of voters from ethnic groups that do not have strong historical ties to either party, so are excluded from the crossing party lines estimate. About half (57%) of these voters chose the debate winner in the control sample (as one would expect if they were truly unaffiliated). The point estimate on the treatment effect for this group is also large, at 10.1 percentage points (s.e. 8.4), but not statistically significant (one sided *p*-value of 0.115).

## 4.2 Endogenous Response by Candidates and Other Party Officials (Domains B and C)

Domain B explores whether candidates altered their campaign strategy in response to the debates road show, given its strong effects on voters’ political knowledge and opinions. Table 3 presents evidence that candidate campaign spending serves as a complement to the publicity of the polling center debates screenings. The treatment effect for the mean effects index is 0.103 standard deviation units (s.e. 0.039), which is significant at 99% confidence using a two-sided test.

Unpacking the index, treatment effect estimates for all nine component measures—covering candidates from each of three parties and each of three campaign outcomes—are positive in sign. These reflect increases in voter reports of having received a gift from the particular candidate, the monetary value of the gift (expressed in logs), and the number of times the candidate visited the community, all with reference to the weeks leading up to the election. The response by candidates from the two major parties, the APC and the SLPP, is roughly proportional when measured as the percentage increase on their base level of spending in control communities. Third party candidates, who generally had less of a chance of winning, appear to have responded more strongly to the road show: estimates for each of the three PMDC campaign measures are statistically significant. All estimates are robust to excluding control variables (see Appendix Table A.4).

What drives this reallocation of campaign effort? One explanation is that by equipping voters with greater political knowledge and changing their voting choices, debate screenings made these areas more competitive. This would be consistent with a standard “swing voter” model (Lindbeck and Weibull [1987]). Extending the exploratory analysis above (and again noting that it was not pre-specified), the treatment effect on the campaign index is five times larger in the constituency where the “outsider” candidate won the debate (at 0.41 standard deviation units, s.e. 0.16) compared to the other constituencies in the sample, which is precisely where the debates had the largest impact on the competitiveness of the race. The coefficient on this difference (0.33, s.e. 0.16) is significant at 95% confidence. Note, however, that the coefficient for the remaining constituencies, where the screenings *de facto* made the races less competitive as the locally popular candidates performed better in the debates, remains positive and statistically significant at 95% confidence (0.08, s.e. 0.04). This can be reconciled with the idea of greater competition if the debates made vote shares in screening communities more uncertain, as recall that the actual impact of the debates on voting was not revealed until Election Day. This is consistent with the extended model in Casey (2015), where information increases voter responsiveness to individual candidate attributes, thereby

making it harder to infer vote shares from the ethnic composition of a locality, and thus widening the set of potentially competitive areas.

Appendix Figure A.2 explores whether the intensity of the campaign response covaries with candidate performance during the debate. It speaks to the question of whether the expenditure response largely reinforced or worked to unwind the impact of debates. Panel A reveals an inverted U-shaped relationship between the size of treatment effect on campaign expenditure and the share of audience members who said that candidate won the debate.<sup>17</sup> This suggests that the campaign response to the road show was strongest where the debates themselves were most closely contested. There is also some asymmetry in the tails, where the treatment effect estimate for candidates who received the fewest audience votes is negative (at left) while estimates for those who received many votes (at right) are positive although noisily estimated. The relatively stronger campaign response by those who performed well versus poorly would work to reinforce the impact of debates. Panel B presents the same estimates for third party candidates and shows that they responded most strongly where they had performed well during the debate. This again suggests that the spending response was strongest where the debates worked to increase the competitiveness of the electoral race.

Appendix Table A.5 presents results for domain C, regarding whether other party officials not directly involved in the debates responded to the publicity of the road show. We find little evidence that centralized party bosses and candidates for President, Local Councillor and Local Council Chair altered their campaign strategy in response to dissemination of the MP candidate debates. While the treatment effect for the mean effects index is positive in sign (0.082 standard deviation units), it is not significant at conventional levels (s.e. 0.052 and  $p$ -value 0.113). Similarly, while the majority (16 of 21) of treatment effect estimates for individual outcomes are positive, none are significant at conventional levels. One interpretation is a pseudo placebo test: candidates for offices not involved in the debates should not alter their campaign strategy in response to the MP debate road show. This would make sense if the parties did not strongly coordinate campaigns across candidates for different offices, or if the road show was not a salient enough event to justify reallocating campaign support from other party members to support the participating candidates. While this seems plausible, we do not want to place too much weight on this interpretation, for two reasons. The sample size for this community-level survey is small (224 communities), so power to reject the null is limited. And, the community survey questions bundled together the campaign efforts of all party officials and candidates for all offices, which includes Parliament, so they do not clearly exclude the MP candidates as one would do for a true placebo.

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<sup>17</sup>Estimates control for the underlying ethnic-party loyalty of the constituency. Panel A considers candidates from the two major parties only.

### 4.3 Unpacking Causal Mechanisms via the Individual Treatment Arms (Domain D)

Table 4 presents results for the series of treatments administered to individual voters to explore the relative effects of different types of information conveyed by the debates. All three arms were effective in transmitting political information, where the treatment effect on the mean effect index is positive and significant at 99% confidence for each (columns 1, 3 and 5). The coefficients for debates (0.109, s.e. 0.021) and the radio reports (0.095, s.e. 0.018) are more than twice as large in magnitude as that for the get to know you videos (0.041, s.e. 0.016), differences that are statistically significant under naïve  $p$ -values and FDR corrected  $q$ -values (columns 8 and 12). The FDR  $q$  values adjust across all 24 (two-sided) comparative tests run. While the coefficient for debates is slightly larger than that for the radio reports, the difference is not statistically distinguishable from zero (column 9).

The pattern of treatment effects for general political knowledge mirrors that for the hypothesis overall: all three arms yield strong positive effects; and the debate and radio report estimates are larger in magnitude than those for get to know you videos. Similarly, estimates for knowledge of candidate characteristics are positive and significant for all three arms, although now magnitudes are comparable across treatments. Interestingly, this implies that voters were equally as able to infer things like which candidate was better educated and which one had more public office experience by watching the five minute get to know you video as they were after watching 45 minutes of debate. These topics were generally not asked directly, but could plausibly be inferred from the candidate’s manner of speech, physical carriage, or confidence. For policy knowledge, only the debates and radio reports enhanced voter ability to correctly locate candidates on the three policy spectra. The estimate for the get to know you videos, which focused solely on candidate persona and delivered no policy information, is near zero and thus reassuring for the soundness of the research design.

Notably, only debates moved voters into better policy alignment with the candidates they selected (row 5). The treatment effect for debates (0.081, s.e. 0.029) is positive and significantly larger than that for the other two arms, which are both indistinguishable from zero. For the get to know you videos, this is clear and consistent with the null result on policy knowledge. For the radio reports, however, it implies that the acquired knowledge of policy positions did not translate into better policy alignment as it did for the debates. Similarly, only the debates had an impact on votes for the debate winner (0.058, s.e. 0.040), which is statistically larger than the result for the radio reports. The fact that radio was equally as effective in building knowledge, but only debates impacted policy preferences and voting choices, suggests a key role for personality in persuading voters to change their behavior.

None of the three treatment arms impacted crossing party lines, consistent with what we saw earlier for the public screenings, and none of them affected candidate likeability scores.

Overall, while the debate, radio report and get to know you treatments all affected political knowledge, it is only debates that moved voters to change whom they voted for and update their policy views. While this test was not prespecified, we can evaluate whether the treatment effect for debates is larger than the sum of the effects of the radio plus get to know you arms. For policy alignment, the treatment effect for debates is larger than the sum of the other two by 0.114 standard deviation units (s.e. 0.043), and for votes for the debate winner, it is larger by 0.098 (s.e. 0.069). Under one sided tests, we can reject the null at 99 and 92 percent confidence, respectively, or at 99 and 85 percent under two sided tests. This pattern of results is consistent with the idea that debates are additive in both charisma and policy or professional content, and that the combination is more powerful than either in isolation.

#### **4.4 Effects of Debate Participation on Elected Members of Parliament (Domain E)**

Moving from the election to the behavior of the winning candidates once in office, Table 5 presents results for the four longer term accountability hypotheses. Overall, eight of the eleven individual treatment effect estimates are positive in sign and five are at least marginally significant. The positive effects are concentrated in the latter two hypotheses and include increases in verifiable development expenditures, the outcome that most directly enhances constituency welfare. While these findings are substantively important, we stress that they are based on a limited sample and are thus more speculative than the results presented for other domains.

Discussing the hypotheses in order, we find little evidence for treatment effects on the activity level of elected MPs during sittings of Parliament. Outcomes cover the period from when MPs were inaugurated in December 2012 through the end of 2013, or 57 sittings in total. Specifically, the treatment effect estimates for the percentage of sittings attended and the total number of committees joined are positive but not statistically distinguishable from zero. The estimated effect for total number of public statements made during Parliamentary sittings is negative but not significant, and note the low baseline mean of only 4 statements.

There is also no evidence of treatment effects on enhancing topical consistency between the candidate's first priority sector articulated during the campaign, and their subsequent effort in promoting that sector. We defined the priority sector for each MP based on their pre-election response to the question, "If you had to prioritize one issue in Sierra Leone to

receive additional funding in the national budget, what issue would you prioritize?” The modal response was education (44 percent), followed by roads, health and agriculture (each with 15 percent). Treated MPs appear no more likely to have made public statements during a Parliamentary agenda item concerning their preferred sector, although note that only one MP in the entire sample did so. They similarly do not appear more likely to join committees dedicated to that sector, and their constituents are no more likely to report that they focus on that particular sector. We were not able to evaluate consistency in voting in line with pre-stated positions on key national policy issues of interest, as relevant bills have either not yet been introduced (including the gender equity bill) or were passed unanimously (including a freedom of information act).

We do, by contrast, find positive and significant effects of debate participation on subsequent constituency engagement. Participating MPs made on average 1.3 (s.e. 0.6) additional community visits, on a base of 2.9, and held 1.1 (s.e. 0.6) more public meetings, on a base of 1.0. These represent increases of 145 and 210 percent, respectively. Their constituents on average named more sectors in which they viewed the MP as doing “a good job in promoting” that sector in the constituency, and medical staff in clinics were more likely to report that the MP was doing a good job in promoting health. The mean effects index covering all four outcomes is positive and highly significant (0.8 standard deviation units, s.e. 0.3).

Most importantly, we find significantly higher spending on development projects by MPs who participated in a debate. Recall that the constituency facilitation fund (CFF) is an annual allotment of 43.8 M Leones (approximately US\$ 11,000) intended to support the development of, and the MP’s own transport to, their constituency. MPs are fairly unconstrained in how they spend this money and are not subject to monitoring or reporting requirements. During the debates, each candidate was asked to articulate their plans for spending the CFF. All candidates, save one, promised to spend some, if not all, of the funds on development projects. To compile data on how the CFF was actually spent, we first surveyed each elected MP to generate a detailed itemized list of expenditures and project locations for the first CFF allotment. Our research teams then conducted exhaustive field work to verify these expenditures in the MP’s home constituency, which involved in person visits and physical examination of all purported projects, and multiple interviews with community leaders, clinic staff, teachers and residents of villages where money was reported to have been spent. We did not attempt to verify the MP’s own transport expenses, so unaccounted for funds represent either legitimate travel costs or leakage. Note, however, that substantially larger travel expenses in the control group is not consistent with the evidence above that control MPs held fewer meetings with their constituents.<sup>18</sup>

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<sup>18</sup>It also cannot be explained by differential distance to the capital or availability of major roads as both

For the control group, Table 5 shows that only 36 percent of the \$11,000 allotment could be verified as spent on the development of the constituency. The treatment effect estimate of 54.7 (s.e. 31.7) suggests that MPs who participated in the debates spent 2.5 times as much on verifiable development expenditures. The effect is significant at 95% confidence and the point estimate corresponds to average gains of roughly six thousand dollars per constituency. Appendix Figure A.3 transparently plots the distribution of this outcome by treatment assignment. Comparing the two subplots shows that the positive treatment effect estimate is driven by differences in both tails: there are more low values among control MPs and more high values among treated MPs. Estimates are robust to dropping the top outlier, which reduces the treatment effect to 46.5 (HC<sub>2</sub> s.e. 29.1, one sided  $p$ -value 0.06).

Appendix Table A.4 reruns all specifications in this section without the control variables and performs two-sided tests. Of the six treatment effect estimates that are significant at 95% confidence, two fall to 90% confidence and one falls just below the 90% threshold with these two adjustments. The latter is the estimate for CFF spending, where the point estimate falls to 49.5 (s.e. 29.3), with a  $p$ -value of 0.105 under a two-sided test.

The small sample for this domain calls for additional robustness checks.<sup>19</sup> The final row of Table 5 reports estimates for a mean effects index that covers all 11 outcomes. It suggests that participation in a debate enhanced the post-election performance of MPs by an average of 0.36 standard deviation units (s.e. 0.17), which is significant at 95% confidence under both one- and two-sided tests, with and without controls. Gelman and Carlin (2014) recommend reporting the Type S (for “sign”) error rate when working with noisy estimates. A Type S error is the probability, for a given true effect size, that a hypothetical replication yields an estimate with the incorrect sign, conditional on it being statistically significant. If the true effect on MP accountability is half as large as our estimate, the Type S error rate would be less than one percent. If the true effect equals what we found for candidates’ campaign response (roughly a third of the accountability estimate), it would be five percent. These are reassuringly low probability estimates. It is only when we scale down the true effect size by a large amount that we begin to see nontrivial Type S error rates: for example, if the true effect size is only one tenth of our estimate, the Type S error rate would be 27 percent.

What drives these expenditure effects? One possible interpretation is accountability pressure: many more voters now know how much money the MP has at his disposal, know what he promised to spend it on, and the MP knows that they know. Moreover, the MP is aware that a video record of his commitments exists, which could be used to hold him to account in future by the public or civil society.<sup>20</sup> The potential role of respected and impartial

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of these characteristics are well balanced across treatment assignment (see Appendix Table A.1).

<sup>19</sup>These additional robustness tests were not pre-specified.

<sup>20</sup>In another context, this might suggest a weaker response by term limited politicians, however there are

civil society actors, such as SFCG the host of the debates, in asking future questions about CFF spending may be particularly salient for debate MPs.<sup>21</sup> Arguably such a credible independent actor is a prerequisite for MPs of different parties to agree to participate in such a debate and may be critical for their effectiveness. This previews the role a more developed media might play in poor countries: citizen access to ongoing news coverage of politics in the U.S. has been shown to induce greater politician effort (Snyder and Strömberg 2010) and drive the allocation of federal relief spending (Strömberg 2004).

An interesting but unlikely alternative explanation is candidate selection. As we gave the central party bosses a list of constituencies where we would host debates, they could have strategically responded by allocating different candidates to those races. If the attributes the parties thought were associated with favorable debate performance also correlated with performance in office, then the treatment effect would be operating through a change in the candidate pool instead of the accountability and commitment channel. While this would constitute an exciting general equilibrium response worth exploring in future, it is unlikely to hold in this experiment for several reasons. First, there was little time between our notification to parties and the close of candidate registration. Given the relative newness of debates in Sierra Leone, it further seems unlikely that parties would respond strongly to an unproven concept. Moreover, Appendix Table A.1 presents little evidence that candidate characteristics vary systematically across constituencies assigned to debates participation and controls: while candidates in treated constituencies had somewhat less political experience; measures of age, gender, years of schooling, managerial experience, ethnicity and pre-election quiz scores are all comparable across the two groups.

Relatedly, if debates made voting more responsive to competence, these effects could be explained by selection via the electoral process. Yet recall that while public screenings were held in one quarter of the polling centers, only a small fraction of the total registered voting population in a given constituency attended. This means that the road show did not change the outcome of who won any of the fourteen races covered. If the program were scaled up, however, there could be potential impacts on MP selection.

## 4.5 Secondary Outcomes

There were several outcomes we thought were interesting but less directly related to the debates intervention, so segregated them in the PAP to a more speculative, exploratory category. These cover voter turnout, interest in politics, perceptions of the election, electoral

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no term limits for MPs in Sierra Leone.

<sup>21</sup>Recall that candidates in control constituencies were asked the same policy questions that appeared in the debate, including how they would spend the CFF, during the pre-election survey.

misconduct, and MP self-reported behavior in office. We find little evidence for additional treatment effects on voters or electoral conduct; and the results for MP self-reports mirror those for the objective measures captured in Table 5.

The results for turnout in Appendix Table A.6 are mixed across voter samples. For the group screening intervention, estimates reflect negative yet insignificant treatment effects in our exit polls and in the National Electoral Commission (NEC)'s official polling center returns. Note that baseline turnout was very high in the control areas, measured at 98.4 percent in our exit poll sample, which is drawn from households in the immediate vicinity of the polling center itself; and 83.3 percent in the NEC returns, which cover voters from the entire catchment area of the polling center. In the individual treatment sample where turnout was lower (96.1 percent), we find positive and significant effects for the debate and get to know you arms, and no effect for the radio report. For direct comparability with the estimates in Table 4, these effects are expressed in standard deviation units. To provide a sense of magnitude, the treatment effect estimate for the debates treatment is 1.4 percentage points (s.e. 0.69). Since these results do not replicate in the larger polling center sample, we do not place much weight on them, and conclude that debates exposure if anything had small positive impacts on turnout.

There is no evidence that the debates increased voter confidence that the elections were free and fair, although baseline confidence was extremely high (91.9 percent for controls). We find some suggestive evidence that exposure to debates spurred voter interest in politics more generally, where voter ability to name the two Presidential candidates and frequency of discussing politics increased (although the latter is not statistically significant).<sup>22</sup> There is no evidence that the debates increased electoral misconduct, which was reasonably low according to community reports: police were present at 80% of polling centers, and in only 18% was there “some sign” of inappropriate behavior by officials to sway voters.

Self-reported behavior by the MPs themselves tracks what we saw in the previous section. We find no divergence in reported rates of activity in Parliament or topical consistency on policy issues over time. By contrast, treated MPs say that they spent more days in their home constituency and held more meetings with constituents. These debate participants further claimed to have spent more money under the CFF and allocated a larger portion towards development projects.

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<sup>22</sup>Consistent with this, we also find positive and significant treatment effects on voter ability to name local council candidates from all three parties, however these outcomes were not pre-specified.

## 5 Additional Analysis

### 5.1 Survey Priming

How much of these effects can be attributed to the content of the treatment itself as compared to the experience of being surveyed in depth about one’s political views? This distinction is important in light of findings that the act of surveying has nontrivial impacts on behavior (Zwane et al. [2011]). Using two separate estimation techniques, we find significant priming effects on general political knowledge. Reassuringly, all results above hold net of these effects.

First, in Panel A of Appendix Table A.7, we compare surveyed controls to “pure” controls in the individual-level experiment. At the time of treatment implementation, surveyed controls were given the same survey that accompanied the debates treatment, which may have primed respondents to seek out information on outcome variables of interest or increased their salience in the weeks leading up to the Election. By contrast, “pure” controls were asked only basic demographic questions, and were not asked any questions about politics until the exit polls, thus experiencing no prime. Estimates in the second row of column 4 suggest that the survey experience on its own led to a 0.099 standard deviation unit (s.e. 0.035) increase in general political knowledge. In the left hand side of the same row, column 1 compares those in the debate arm to surveyed controls to reveal a 0.211 standard deviation unit (s.e. 0.042) increase in general political knowledge, which can be attributed to the content of treatment, above and beyond the survey experience. Together, these two estimates suggest that survey priming accounts for one third of the total treatment effect on general political knowledge. There is only one other marginally significant priming effect, on votes for the debate winner, however it does not replicate in the larger sample of Panel B.

Our second approach uses the group screening sample to capture a survey reinforcing effect by tracking those assigned to treatment with survey versus “pure” treatment across treated and control polling centers. This is thus the converse of the above, where we now measure whether being surveyed at the time of treatment facilitates greater comprehension or absorption of the political information conveyed by the debates. Respondents in the treatment plus survey group were given an incentive to attend and surveyed at the debate screening. Members of the “pure” treatment group were given the attendance incentive but not surveyed until the exit poll. All respondents in the control polling centers are “pure” controls. Estimates in Column 1 of Panel B suggest that the “pure” treatment effect of watching the debate without being surveyed is a 0.233 standard deviation unit (s.e. 0.055) increase in general political knowledge. In column 4, there is evidence for an additional 0.099 standard deviation unit (s.e. 0.037) effect of being surveyed alongside treatment, suggesting that the survey reinforcing effect similarly accounts for roughly a third of the total effect

on general knowledge. For all other outcomes—knowledge of candidate characteristics and policy stances, policy alignment, and votes for the debate winner—the “pure” treatment effect remains positive and highly significant, and there is no evidence for additional survey reinforcing effects.

## 5.2 Treatment Effect Heterogeneity

Overall, we find little evidence for systematic heterogeneity in treatment effects on voters. Appendix Table A.8 estimates heterogeneous effects by respondent sub-groups of gender, age and lack of fluency in Krio (the national *lingua franca* and language of the debates). These specifications use the hypothesis level mean effects index and include all subgroup terms and their interaction with treatment status in a single regression. Across the fifteen estimates of interest, only the negative coefficient on political knowledge for women (-0.076 standard deviation units, s.e. 0.021) is significant at conventional levels (under two sided tests). In terms of magnitude, this suggests that women acquired only 75% as much political knowledge from the debates when compared to men. We find little evidence that voter responsiveness varied with the expected competitiveness of the race, based on 2007 vote margins, or with candidate performance in the debate, based on expert panel scores (results not shown). Our results also do not appear to be driven by large effects in any particular constituency. As an example, the treatment effect estimate on voting for the debate winner is robust to excluding each constituency one by one.

Considering dissipation of effects over time, we find suggestive evidence for an immediate drop off in political knowledge gains in the days after treatment, but no evidence that this decay intensifies with the lag between treatment exposure and the exit poll. Confining our attention to the treatment group, voter knowledge doubled from the before- to after-screening surveys: voters on average could correctly answer 24 percent of political knowledge questions at baseline, which jumped to 46 percent immediately after watching the group screening. By the time of the exit poll, this percentage had fallen to 40, implying that around a third of the initial gains had dissipated. This nets persistent gains of 16 percentage points, or a 66 percent increase on baseline knowledge. Similar estimates obtain for those in the individual-level debate arm, save voters in this sample began from a higher base: 29 percent correct answers on average in the before survey, increasing to 46 percent in the after survey, and falling to 42 percent in the exit poll. Bringing in the control group, we next estimate whether this attenuation covaries with the time lag between the screening and the exit poll, which ranges from 6 to 35 days. This time variation is not random, so estimates rely on the assumption that factors determining field team deployment (e.g. remoteness) are orthogonal

to voter responsiveness to treatment. Here we find no systematic evidence for heterogeneity over time: treatment effects for those treated far from the election, e.g. 30 days earlier, are very similar to estimates for those treated close to the election, e.g. within 10 days of the exit poll. Our interpretation is that some knowledge gains dissipate quickly after exposure, while the remaining gains observed a week later persist for several additional weeks.

### 5.3 Debate Delivery: Individual versus Group Exposure

We next examine how debate delivery—via group screening versus individual private viewing— affects the impact it has on voter behavior. Since many aspects of the experience differ across the two delivery modes, we will not be able to pin down exact mechanisms, but can speculate as to how salient differences might drive divergence in treatment effect intensity.

The first pronounced difference in delivery is that the screenings involved large public gatherings of a couple hundred people, while the individual treatment had respondents watch the debate alone on a tablet device.<sup>23</sup> Consistent with a substantive role for social mobilization, lab experiments show that exposure to the reactions of audience members—either real or fabricated—can have significant effects on evaluations of debate performance and candidate attributes (Fein, Goethals and Kugler [2007], Davis, Bowers and Memon [2011]). The public nature of group screenings may also generate common knowledge that eases coordination problems and reinforces the messages conveyed (Chwe [2001]). The papers by Wantchekon and co-authors cited earlier all involve public treatments, where groups of voters come together in town hall meetings, and find lasting effects. The second salient difference is how much harder it would have been for candidates to track the locations of the individual experiments and respond with greater campaign expenditure. Assuming that voters value the additional candidate visits and gifts, the uptick in campaign effort could contribute to a larger total effect for the group screenings.

Table 6 presents the cleanest comparison of the two delivery mechanisms by limiting the group screening estimates to the 8 constituencies where the individual treatments were also implemented, and restricting the individual estimates to comparisons between the debates and pure control arms. First note that the qualitative pattern of effects for the two delivery modes on these comparable subsamples is the same: strong positive treatment effects on political knowledge, policy alignment, and votes for the debate winner; and no evidence of effects on crossing party lines or voter openness. Second note that the treatment effect for

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<sup>23</sup>The content of the debate films was exactly the same under the two conditions. Other differences in delivery are that individual treatments were administered in larger polling centers (as measured by total registered voters); and the implementation procedures varied, where group screenings played music before the debates, played the debates twice, and had simultaneous translation into the relevant local language.

the group screening is larger in magnitude than that of the individual viewing everywhere save on votes for the best performer, where it is equal. This difference is more pronounced when we scale up the intention-to-treat effects for the group screening to estimate average treatment effects on compliers (column 2), which is more directly comparable to the individual treatments where compliance was near perfect. Notice that the difference in magnitude is largest for knowledge of candidate characteristics (ten times larger), knowledge of candidate policy positions (three times larger), and moving into policy alignment (twice as large). These differences are consistent with the idea that watching the films in a group setting facilitated discussion among voters that clarified and reinforced the information about candidates and policy conveyed by the debates.<sup>24</sup> The fact that point estimates for votes for the debate winner are the same across modes suggests that any impact of additional campaign effort did not translate into differences in vote choices, perhaps because the candidates who responded most strongly were from the relatively uncompetitive third party.

## 6 Conclusion

These experiments suggest that voters acquire significant political knowledge from watching candidate debates, knowledge that persists over a number of weeks, and importantly, influences their vote choice on Election Day. By equipping voters with knowledge that changes their voting behavior, debate screenings further attracted greater campaign investment by participating candidates. This spending response is consistent with debate exposure making vote margins appear narrower or more uncertain *ex ante*, even in areas where it was revealed *ex post* that debates favored the more popular candidate. Debates convey comprehensive information about candidates—including charisma, professional qualifications, and policy stances—and the combination of factors appears more powerful than each in isolation. Over the longer run, participation in debates enhanced the accountability pressure on elected officials, increasing their subsequent engagement with constituents and expenditure on development projects. The finding that debates can strengthen accountability, even in relatively uncompetitive areas where direct electoral pressure is limited, is important.

From a policy perspective, this project demonstrates that interparty debates are logistically feasible to host and disseminate, and could be replicated on a larger scale. In considering the costs and benefits of scaling up, fixed video production costs for the debates themselves were modest in this setting: roughly five thousand dollars per constituency. The

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<sup>24</sup>The fact that the impact on general political knowledge is more comparable across the two modes suggests that basic differences in comprehension (attributable to waning attention or the lack of local language translation in individual delivery) cannot fully explain the divergence in magnitude of effect.

point estimate on increased development expenditure associated with debate participation is large enough to fully cover this cost. In terms of marginal dissemination costs, the mobile cinema in rural areas was a relatively resource intensive way to publicize the debates. Mobile cinemas in urban areas could reach substantial numbers at lower cost. In settings where mass media penetration is higher, dissemination via television or radio broadcast are obvious alternatives. While the individual treatments suggest that video is more effective than audio alone, the radio report we tested was rather dry. A livelier program that captures a real time debate between candidates in the recording studio might come closer to the impacts of the film screening, and could reach large voting audiences at negligible marginal cost.

One could imagine multiple equilibria that might arise if debates were taken to scale. At the pessimistic end, politicians could quickly learn to game the debates and unravel any benefit to voters. Candidates could, for example, coordinate on making only vague statements so that debates do not reveal their relative policy positions and the public record contains no concrete promises for voters to later follow up on. The novelty value of debates might also fade over time, making each subsequent debate less interesting to voters and less impactful for electoral and policy outcomes. More optimistically, the knowledge that debates provide information to voters could drive candidate effort and policy more in line with the interests of citizens. Incumbent awareness that debate videos exist and could be used to hold them to account could further motivate better performance in office. And, by making voting more responsive to candidate quality, debates could strengthen incentives for political parties to invest in recruiting more competent candidates. We leave these important questions of effects at scale and persistence over repeated events to future research.

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**Table 1: Domain A - Treatment Effects of Polling Center Debate Screenings on Voters**

Mean effects index by hypothesis	Treatment effect (standard error)	Per comparison $p$ -value (one sided)	FWER adjusted $p$ -value (one sided)
	(1)	(2)	(3)
A1. Exposure to debates increases political knowledge (20 outcomes)	0.281 (0.028)	0.000**	0.000**
A2. Exposure to debates increases policy alignment (3 outcomes)	0.106 (0.035)	0.002**	0.010**
A3. Exposure to debates increases vote shares for the candidate that performed the best in the debates (2 outcomes)	0.086 (0.043)	0.023*	0.078+
A4. Exposure to debates increases the willingness to vote across party lines (3 outcomes)	-0.018 (0.032)	0.718	0.705
A5. Exposure to debates enhances voter openness to other parties (5 outcomes)	0.091 (0.048)	0.028*	0.078+
Observations	5,247		

Notes: i) significance levels indicated by +  $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$  based on one-sided tests in the direction of the hypothesis statement in the pre-analysis plan (PAP); ii) robust standard errors clustered by polling center; iii) all specifications include stratification bins for the polling center (number of registered voters and distance to next nearest), respondent (youth status and gender) and constituency fixed effects; iv) specifications further include the full set of control variables (gender, age, years of schooling, polygamous marriage, farming occupation and radio ownership); v) treatment effects are on the hypothesis-level mean effects index constructed following Kling, Liebman and Katz (2007) and expressed in standard deviation units; vi) adjustments to control familywise error rate (FWER) computed following Westfall and Young (1993) and Anderson (2008); and vii) data source is the exit poll survey.

**Table 2: Domain A - Treatment Effects on All Individual Outcomes**

Individual outcomes by hypothesis	Control mean (1)	Treatment effect (2)	Standard error (3)	<i>p</i> -value 1-sided (4)	FDR <i>q</i> -value (5)	N (6)
<b>Panel A1. Political knowledge increases</b>						
i. Knows amount of the constituency facilitation fund	0.034	0.140	0.018	0.000**	0.001**	5,400
i. Knows who is entitled to free healthcare (FHC)	0.706	0.056	0.033	0.044*	0.038*	5,399
i. Knows the gender equity bill (GEB) is 30%	0.352	0.012	0.030	0.346	0.237	5,398
i. Knows MP job responsibilities (out of 3)	0.555	0.217	0.070	0.001**	0.003**	5,400
ii. Candidate choice driven by individual characteristic	0.209	-0.010	0.028	0.638	0.350	5,229
ii. Knows which candidates had been an MP before	0.490	0.111	0.032	0.000**	0.002**	5,400
ii. Knows which candidate was most educated	0.243	0.159	0.044	0.000**	0.001**	3,097
ii. Knows candidate with most public office experience	0.319	0.076	0.037	0.021*	0.021*	2,972
ii. Knows APC candidate's name	0.442	0.181	0.034	0.000**	0.001**	5,058
ii. Knows PMDC candidate's name	0.115	0.105	0.031	0.000**	0.002**	3,291
ii. Knows SLPP candidate's name	0.395	0.168	0.031	0.000**	0.001**	5,400
iii. Knows APC candidate's first priority issue	0.190	0.088	0.030	0.002**	0.005**	5,057
iii. Knows PMDC candidate's first priority issue	0.099	0.064	0.026	0.008**	0.012*	3,288
iii. Knows SLPP candidate's first priority issue	0.142	0.149	0.028	0.000**	0.001**	5,398
iii. Knows APC candidate's view of FHC	0.252	0.197	0.035	0.000**	0.001**	4,579
iii. Knows PMDC candidate's view of FHC	0.119	0.007	0.037	0.421	0.259	2,812
iii. Knows SLPP candidate's view of FHC	0.123	0.072	0.029	0.007**	0.011*	4,921
iii. Knows APC candidate's position on GEB	0.285	0.096	0.035	0.003**	0.007**	5,058
iii. Knows PMDC candidate's position on GEB	0.244	0.209	0.053	0.000**	0.001**	3,291
iii. Knows SLPP candidate's position on GEB	0.331	0.155	0.038	0.000**	0.001**	5,400
<b>Panel A2. Policy alignment increases</b>						
Voter's view on FHC matches that of chosen candidate	0.394	0.092	0.035	0.004**	0.008**	4,727
Voter's view on GEB matches that of chosen candidate	0.613	-0.024	0.024	0.843	0.432	5,160
Voter's priority issue matches that of chosen candidate	0.425	0.090	0.031	0.002**	0.005**	5,160
<b>Panel A3. Votes for best performing candidate in the debate increase</b>						
Voted for debate winner, as judged by audience	0.803	0.049	0.021	0.012*	0.015*	5,219
Voted for debate winner, as judged by expert panel	0.712	0.011	0.022	0.312	0.218	5,219
<b>Panel A4. Votes across ethnic-party lines increase</b>						
Voted across ethnic-party lines	0.107	-0.012	0.013	0.811	0.432	4,569
Voted for a different party for MP than did in 2007	0.163	0.004	0.019	0.425	0.259	4,405
Split ticket across parties for MP vs President	0.058	-0.009	0.010	0.833	0.432	5,212
<b>Panel A5. Voter openness to candidates increases</b>						
Voter likeability rank for APC candidate (10 point scale)	6.523	0.161	0.261	0.269	0.199	5,073
Voter likeability rank for own party's candidate	7.971	0.245	0.237	0.151	0.113	5,160
Voter likeability rank for PMDC candidate	2.369	0.579	0.273	0.018*	0.020*	3,299
Voter likeability rank for rival party's candidate	3.395	0.117	0.226	0.303	0.218	4,906
Voter likeability rank for SLPP candidate	4.952	0.229	0.230	0.160	0.115	5,414
<b>Panel A3 Alternate: NEC Official Returns</b>						
Vote share of debate winner, as judged by audience	0.711	0.035	0.017	0.033*		206
Vote share of debate winner, as judged by expert panel	0.617	0.035	0.016	0.027*		206

Notes: i) significance levels +  $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$  based on one-sided tests in the direction pre-specified in the PAP; ii) robust standard errors clustered by polling center; iv) specifications include stratification bins for the polling center (number of registered voters and distance to next nearest), respondent (youth status and gender) and constituency fixed effects; v) additional controls vary by hypothesis from the set (gender, age, years of schooling, polygamous marital status, farming occupation and radio ownership); vi) false discovery rate (FDR) adjustments computed following Benjamini, Krieger and Yekutieli (2006) and Anderson (2008) across all 38 primary and secondary outcomes in domain A; viii) data source is the exit poll survey in panels A1-A5 and the National Electoral Commission polling center-level returns in A3 Alt; and ix) NEC returns exclude one constituency where the SLPP candidate was disqualified immediately

**Table 3: Domain B - Treatment Effects of Polling Center Screenings on Candidates**

Outcomes and mean effects index	Control mean	Treatment effect	Standard error	Naïve <i>p</i> -value (2 sided)	FDR <i>q</i> -value	N
	(1)	(2)	(3)	(4)	(5)	(6)
<b><i>Hypothesis B1. Mean effects index (all 9 outcomes)</i></b>	<b>0.000</b>	<b>0.103</b>	<b>0.039</b>	<b>0.008**</b>		<b>5,399</b>
Received any gift from the APC candidate	0.160	0.011	0.027	0.686	0.666	5,055
Received any gift from the PMDC candidate	0.007	0.013	0.006	0.027*	0.089+	3,220
Received any gift from the SLPP candidate	0.089	0.007	0.020	0.725	0.666	5,397
Value of gift received from APC candidate (in log(value+1))	0.412	0.121	0.098	0.217	0.364	4,989
Value of gift received from PMDC candidate (in log(value+1))	0.014	0.034	0.014	0.016*	0.089+	3,213
Value of gift received from SLPP candidate (in log(value+1))	0.210	0.077	0.063	0.222	0.364	5,347
Voter report of number of APC candidate visits to village	1.292	0.147	0.137	0.285	0.398	5,056
Voter report of number of PMDC candidate visits to village	0.353	0.219	0.093	0.019*	0.089+	3,291
Voter report of number of SLPP candidate visits to village	1.273	0.070	0.186	0.709	0.666	5,399

Notes: i) significance levels +  $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$  based on two-sided tests; ii) robust standard errors clustered by polling center; iii) specifications include stratification bins for the polling center (number of registered voters and distance to next nearest), respondent (youth status and gender) and constituency fixed effects; iv) additional controls determined by analysis of control group data and include gender, age, years of schooling, and radio ownership; v) mean effects index constructed following Kling, Liebman and Katz (2007) and expressed in standard deviation units; vi) adjustments to control false discovery rate (FDR) computed following Benjamini, Krieger and Yekutieli (2006) and Anderson (2008); and vii) data source is the exit poll survey.

**Table 4: Domain D - Causal Mechanisms Explored via the Individual-level Treatments**

Hypothesis mean effects index	Debate		Get to Know You		Radio Report		Debate vs. GTKY		Debate vs. Radio		Radio vs. GTKY	
	Treatment	1 sided	Treatment	1 sided	Treatment	1 sided	Treatment	2 sided	Treatment	2 sided	Treatment	2 sided
	effect	Naïve $p$	effect	Naïve $p$	effect	Naïve $p$						
	(std error)		(std error)		(std error)		(std error)	FDR $q$	(std error)	FDR $q$	(std error)	FDR $q$
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
A1. Political knowledge	0.109** (0.021)	0.000	0.041** (0.016)	0.006	0.095** (0.018)	0.000	0.068** (0.022)	0.002 0.011	0.014 (0.018)	0.425 0.436	0.053* (0.022)	0.016 0.068
i. General knowledge	0.175** (0.040)	0.000	0.095** (0.035)	0.005	0.160** (0.045)	0.000	0.079+ (0.043)	0.066 0.174	0.014 (0.034)	0.674 0.585	0.065 (0.050)	0.192 0.275
ii. Candidate characteristics	0.049** (0.019)	0.006	0.068** (0.025)	0.005	0.042* (0.020)	0.021	-0.019 (0.026)	0.455 0.436	0.007 (0.026)	0.793 0.585	-0.026 (0.032)	0.411 0.436
iii. Policy stances	0.127** (0.031)	0.000	-0.003 (0.017)	0.575	0.106** (0.023)	0.000	0.130** (0.028)	0.000 0.001	0.020 (0.026)	0.434 0.436	0.110** (0.026)	0.000 0.001
A2. Policy alignment	0.081** (0.029)	0.004	0.007 (0.027)	0.395	-0.040 (0.024)	0.945	0.074* (0.033)	0.025 0.087	0.121** (0.032)	0.000 0.002	-0.047+ (0.027)	0.083 0.176
A3. Vote for best	0.058+ (0.040)	0.077	0.006 (0.037)	0.440	-0.046 (0.043)	0.851	0.052 (0.045)	0.241 0.291	0.104* (0.052)	0.046 0.136	-0.051 (0.040)	0.203 0.275
A4. Cross party lines	-0.030 (0.035)	0.802	0.004 (0.031)	0.453	0.058 (0.045)	0.103	-0.033 (0.044)	0.447 0.436	-0.088+ (0.050)	0.076 0.176	0.055 (0.042)	0.195 0.275
A5. Openness	0.006 (0.023)	0.395	-0.022 (0.025)	0.812	0.014 (0.030)	0.322	0.029 (0.034)	0.403 0.436	-0.008 (0.033)	0.818 0.585	0.036 (0.029)	0.215 0.275
Number of observations	1,698		1,695		1,695							

Notes: i) significance levels +  $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$  based on per comparison one-sided tests in the direction prespecified in the PAP in Columns 1 to 6 and two-sided tests in Columns 7 to 12; ii) robust standard errors clustered by polling center; iii) specifications include stratification bins for the household (gender and age composition), polling center (number of registered voters and distance to next nearest) and constituency fixed effects; iv) additional controls vary by hypothesis from the set (gender, age, years of schooling, polygamous marital status, farming occupation and radio ownership) as determined by analysis of the control group data; v) mean effects index constructed following Kling, Liebman and Katz (2007) and expressed in standard deviation units; vi) adjustments to control false discovery rate (FDR) computed following Benjamini, Krieger and Yekutieli (2006) and Anderson (2008) across all 24 comparative tests run; and vii) data source is the exit poll survey for the individual treatment sample.

**Table 5: Domain E - Treatment Effects of Debate Participation on Accountability**

Outcomes and mean effects index by hypothesis	Control mean	Treatment effect	Std. error max of (OLS, HC <sub>2</sub> )	Naïve p-value (1 sided)	N
	(1)	(2)	(3)	(4)	(5)
<b><i>Hypothesis E1. Activity in Parliament, index</i></b>	<b>0.000</b>	<b>0.129</b>	<b>0.320</b>	<b>0.345</b>	<b>28</b>
Percent of 2012-13 sittings attended (out of 57 sittings in total)	76.692	3.371	3.003	0.137	28
Total number of public comments in Parliamentary sittings 2012-13	4.286	-1.569	2.224	0.780	28
Committee membership (total number)	3.929	0.524	0.625	0.186	28
<b><i>Hypothesis E2. Consistency with pre-election promises, index</i></b>	<b>0.000</b>	<b>-0.219</b>	<b>0.226</b>	<b>0.829</b>	<b>28</b>
Total public comments in priority sector agenda items	0.154	-0.170	0.166	0.842	27
Membership in priority sector committee	0.231	0.201	0.187	0.147	27
Constituent assessment of focus on priority sector	0.571	-0.343	0.150	0.984	27
<b><i>Hypothesis E3. Constituency engagement, index</i></b>	<b>0.000</b>	<b>0.779</b>	<b>0.307</b>	<b>0.009**</b>	<b>28</b>
Total number of constituent visits	2.915	1.316	0.619	0.022*	28
Total number of public meetings held with constituents	1.018	1.089	0.606	0.043*	28
Total number of sectors constituents assess good performance	1.417	0.882	0.476	0.039*	28
Health clinic staff reported good performance in health	0.202	0.187	0.135	0.089+	28
<b><i>Hypothesis E4. CFF spending, index</i></b>	<b>0.000</b>	<b>1.097</b>	<b>0.619</b>	<b>0.045*</b>	<b>28</b>
Development spending verified in the field (as % of 2012 CFF allotment)	35.560	54.738	31.707	0.049*	27
<b><i>Domain E. All 11 outcomes, index</i></b>	<b>0.000</b>	<b>0.359</b>	<b>0.166</b>	<b>0.021*</b>	<b>28</b>

Notes: i) significance levels +  $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$  based on one-sided tests in the direction prespecified in the PAP; ii) the standard error (and associated  $p$  value) presented is the maximum value of conventional OLS and bias corrected HC<sub>2</sub> estimators in MacKinnon and White (1985), following discussion in Angrist and Pischke (2009); iii) specifications include stratification bins for the constituency (3 bins of ethnic-party bias), MP gender and an indicator for whether the MP held an elected position in the past; iv) mean effects index constructed following Kling, Liebman and Katz (2007) and expressed in standard deviation units; and v) missing values for hypothesis E2 concern one control MP who did not provide a pre-election priority sector and for hypothesis E4 concern one treated MP who did not take office until December 2013 (one year after the

**Table 6: Social Mobilization Effect - Group vs Individual Delivery of Debates**

Mean effects index by hypothesis	Group Screening			Individual Viewing	
	Treatment effect (std error)	ATE on compliers (std error)	N	Treatment effect (std error)	N
	(1)	(2)	(3)	(4)	(5)
A1. Political knowledge	0.324** (0.034)	0.392** (0.040)	3,507	0.140** (0.023)	708
i. General political knowledge	0.371** (0.034)	0.448** (0.068)	3,507	0.304** (0.053)	708
ii. Candidate characteristics	0.268** (0.039)	0.324** (0.047)	3,507	0.031+ (0.023)	708
iii. Policy stances	0.348** (0.049)	0.420** (0.058)	3,507	0.152** (0.037)	708
A2. Policy alignment	0.129** (0.047)	0.156** (0.057)	3,514	0.087* (0.039)	748
A3. Votes for best performer in the debate	0.102+ (0.068)	0.123+ (0.082)	3,510	0.102* (0.051)	748
A4. Cross party lines	-0.022 (0.042)	-0.027 (0.050)	3,511	-0.052 (0.050)	748
A5. Openness	0.059 (0.065)	0.071 (0.078)	3,514	-0.002 (0.031)	748

Notes: i) significance levels +  $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$  based on one-sided per comparison tests; ii) robust standard errors clustered by polling center; iii) specifications include stratification bins for the randomization procedure and constituency fixed effects; iv) additional controls vary by dataset and hypothesis from the set (gender, age, years of schooling, polygamous marriage, farming occupation and radio ownership); v) mean effects index constructed following Kling, Liebman and Katz (2007) and expressed in standard deviation units; vi) the group screening sample is limited to the 8 constituencies where the individual-level treatments were also administered; vii) the individual level estimates are limited to the debates treatment arm versus the "pure" control group; and viii) Column 2 reports 2SLS estimates of the average treatment effect on compliers instrumenting group screening exposure with treatment assignment.

**ONLINE APPENDIX**

Supplemental Materials for

“Debates: Voting and Expenditure Responses to Political Communication”

by Bidwell, Casey and Glennerster

## SIERRA LEONE 2012 ELECTIONS PROJECT

### PRE-ANALYSIS PLAN: POLLING CENTER LEVEL INTERVENTIONS

PIs: Kelly Bidwell (IPA), Katherine Casey (Stanford GSB) and Rachel Glennerster (JPAL MIT)

PAP initially lodged on 20 November 2012.  
PAP revised and re-lodged on 12 September 2013.

*\*\*\*NOTE: The “track changes” pdf version of this PAP available in our AEA trial registry contains a transparent record of every single change we made to the original November 2012 plan. As that document is not very user friendly, here we present the clean text and flag the substantive changes in italics. Also, a set of endnotes provides additional explanation for areas of the PAP that receive little discussion in the main text of the manuscript.*

This study examines the impact of providing citizens with information about Parliamentary candidates via structured inter-party debates in the lead up to the Sierra Leone November 2012 Elections. Randomization and treatments were conducted on multiple levels: constituency, polling center and individual (details on sampling and randomization are available in the project’s AEA trial registry <https://www.socialscienceregistry.org/trials/26>). This pre-analysis plan governs the analysis of the polling-center level treatment only. The first version of this plan was written and registered with the Abdul Latif Jameel Poverty Action Lab on 20 November 2012, before fieldwork for the exit poll, which is the primary source of data for this analysis, was completed. This revised plan incorporates learning from the following steps that we have taken since registering the initial plan, namely we: (i) analyzed the expert panel scoring of debates and the before/after debate surveys; (ii) registered a separate plan for the individual-level treatments; (iii) analyzed treatment effects for the individual-level treatments; and (iv) examined the distribution of outcomes for the control group polling centers in the exit poll data. We are now registering an update to the initial document reflecting learning from steps 1 to 4; before we analyze treatment effects at the polling-center level in the exit poll. Planned future steps include: i) lodging an update governing the analysis of the electoral returns data before completing that portion of the analysis (which depends on two additional datasets that have not yet been cleaned)<sup>1</sup>; and ii) lodging an update governing the analysis of constituency-level effects (as this data collection effort remains ongoing).

#### 1. Background

Our NGO partner, Search for Common Ground, hosted and filmed debates between Parliamentary candidates in 14 constituencies. We randomly selected these constituencies from what we estimated would be the 28 most competitive constituencies, stratifying on the strength of the ethnic bias favoring one party over the other. Within constituencies, polling centers that were sufficiently small (fewer than ~900 registered voters) and far apart from their nearest neighbor (at least ~ one mile) were randomly assigned to treatment and control groups.

Treatment at the polling center level consisted of an evening showing of a video tape of the relevant debate projected at a convenient public place, usually the polling center itself, in the weeks leading up to the Election. Typical protocol for these screenings was as follows: host polling center and satellite communities were notified in advance and invited to attend the screening; 25 randomly selected residents (using data from an earlier listing exercise) were provided a small incentive (10 Maggi spice cubes for

cooking) to attend the screenings; the video was played once in a pause and play format that inserted translation into the relevant local language after each question; the video was played a second time with or without translation; and a secondary screening was held in the largest accessible satellite village earlier in the day, in most cases without translation.

We hypothesize that this video screening intervention may have treatment effects on three different sets of actors: voters, candidates and centralized parties, which we will treat as distinct domains. For each set, we lay out a series of hypotheses regarding the likely areas of impact with corresponding outcome measures below. We will provide treatment effects with unadjusted (or per comparison) p-values for all outcomes specified in this document for all domains. We will also compute mean effects indices by hypothesis (and sub-hypothesis for H3) and correct for multiple inference across outcomes within a hypothesis. Since we have multiple hypotheses regarding voters, we will further make adjustment at the hypothesis-level in domain A (as specified below) but will not make adjustments across domains.

## 2. Domain A: Effects of PC-level Debates on Voters

This domain explores the effects of polling center debate screenings on voter knowledge, behavior and vote choice.

### A. Econometric specifications

Analysis of treatment effects will take the form of:

$$Y_{ipc} = \beta_0 + \delta T_{pc} + \mathbf{X}'_{ipc} \boldsymbol{\Pi} + \mathbf{Z}'_{pc} \boldsymbol{\Gamma} + \mathbf{W}'_{ipc} \boldsymbol{\Psi} + \mathbf{c}_p + \varepsilon_{ipc} \quad (1)$$

where outcome  $Y$  (i.e. vote choice) is measured for individual  $i$  registered in polling center  $p$  within Parliamentary constituency  $c$ ;  $T$  is an indicator variable equal to one if the polling center received the debate video screening treatment;  $\mathbf{X}$  is a vector of indicator variables that denote the stratification bin from which exit poll respondents were drawn (where the bins were constructed by age and gender);  $\mathbf{Z}$  is a vector of indicator variables that denote the stratification bin from which the polling center was drawn (where the bins were constructed by number of registered voters and distance to nearest neighboring center);  $\mathbf{W}$  is a set of additional control variables determined from analysis of the control group data and will vary by hypothesis with an eye toward identifying individual characteristics that do not vary with treatment and that help explain variation in a particular outcome (see algorithm below);  $\mathbf{c}$  is a set of constituency-specific fixed effects (the level of debate and candidates); and  $\varepsilon$  is an idiosyncratic error term clustered at the polling center level. Our main specification includes the full set of controls ( $\mathbf{X}$ ,  $\mathbf{Z}$  and  $\mathbf{W}$ ); we will also show results for the sparser specification that includes only the stratification variables as controls ( $\mathbf{X}$  and  $\mathbf{Z}$  only) as a robustness check. We will determine  $\mathbf{W}$  as any subset of {gender, age, frequency of discussing politics, education, marital status, occupation, radio ownership} that predicts outcomes for the control group with at least 95% confidence. The coefficient of interest is  $\delta$ , the average treatment effect. Unless otherwise stated, all tests will be one-sided in the direction indicated below. The primary source of data is the individual-level exit polls.

Additional analysis will use polling-center level voting returns data from the National Electoral Commission (NEC), taking the form:

$$V_{pc} = \beta_0 + \delta T_{pc} + \mathbf{Z}'_{pc} \boldsymbol{\Gamma} + \mathbf{U}'_{pc} \boldsymbol{\Psi} + \mathbf{c}_p + \varepsilon_{pc} \quad (2)$$

where  $V$  is the outcome (vote share, turnout rate) measured for the polling center  $p$  within Parliamentary constituency  $c$ ;  $U$  is a vector of polling center control variables to be determined from analysis of the control group community survey exit poll data; and other terms remain as above. We will run two specifications: (i) the main specification will include the additional “pure” control polling centers that were not treated nor surveyed in the exit poll and will omit any elements of  $U$  that are not available for these centers; and (ii) a robustness check specification that omits the “pure” control centers and includes the full set of polling center characteristics in  $U$ .

We will test for heterogeneous treatment effects at the level of constituency, candidate and voter, adjusting for multiple inference within each level (i.e. grouping together the tests for all of the voter-level sub-groups when adjusting standard errors). Specifically we will test for differential effects along the following dimensions:

- **Competitiveness of constituency (primary):** the impact of debates on voting choices is expected to be increasing in the competitiveness of the race, as measured by the (decreasing) margin between vote shares for first and second place MP candidates in the previous 2007 election. We will also test (two-sided) whether competitiveness differentially effects measures of policy alignment and likeability.
- **Candidate performance (primary):** better debate performance (as measured by the expert panel) is expected to enhance the effects of debates on the ability of voters to correctly locate candidate’s policy positions, and divergence in performance is expected to enhance treatment effects on votes for the debate winner.  
\*\*\* NOTE: The two measures above were refined by the analysis of the individual-level data.
- **Lesser known candidates (secondary)<sup>ii</sup>:** voter response to strong (weak) performance by less well known candidates (including PMDC, female and non-incumbents) may be stronger than that for other better known candidates, as voters may have greater scope for updating their beliefs
- **Subgroup analysis (primary):** the voting literature suggests that the impact of debates could vary by gender, age, and level of political informedness / naïvete. These tests will be two-sided. We further predict weaker effects for people who do not speak Krio well and may have had trouble understanding the debate.

We further plan to conduct descriptive analysis in the following areas:

- **Spillovers<sup>iii</sup>:** establish whether controls saw / heard about the debates in the exit polls; test whether the impact of debates is positive and decreasing in distance from nearest treated polling center
- **Dissipation of effects:** test whether the impact of debates weakens as the time between the debate screening and Election Day increases
- **Treatment saturation<sup>iv</sup>:** test whether the treatment effect is increasing in treatment saturation at the level of polling center; verify that the TOT effect is greater than ITT at the individual level (if some residents of treated polling centers did not attend the screening)
- **Reaction to polling center results<sup>v</sup>:** test whether responses to the exit poll survey systematically vary between those who were surveyed before versus after preliminary results were posted on polling centers
- **Impacts on competitiveness<sup>vi</sup>:** calibrate the expected impact of debates on the competitiveness of races if taken to scale, based on estimated TEs on vote shares. Also use voter ratings of Presidential

candidates to link and order ratings of MP candidates across constituencies to estimate the impact of sending the best candidate of a given party to other constituencies

- **Priming:** test for survey priming effects by comparing (i) those who attended a screening and were surveyed during the screening (the before and after survey group, plus the after only survey group) to (ii) people who attended a screening but received only an incentive survey (i.e. basic demographics were the only items collected). This complements our analysis in the I-level treatments data that compares surveyed controls to “pure” controls.

*\*\*\* NOTE: Priming was not included in the original PAP and added in the revision. The earlier omission was a simple oversight, as the original design of the experiment included both surveyed and non-surveyed respondents to explicitly test for these effects.*

## **B. Hypotheses and Outcomes**

In what follows we organize hypotheses and outcomes into three families: (i) “Vote choice” concerns changes in actual votes cast, which is the ultimate objective yet will be difficult to influence if stronghold candidates that already have significant advantages perform better in the debates; (ii) “Voting knowledge and behavior” reflects the informedness of voting choices and political participation, which are important in their own right and may serve as a necessary but not sufficient step between the status quo and attaining the ultimate objective of changing votes cast; and (iii) “Secondary outcomes” regarding citizen perceptions of politics that are interesting yet less directly linked to the debate experience. Multiple inference corrections will be implemented across outcomes within hypothesis and across hypotheses within family.

- **Vote choice outcomes**

- a. Hypothesis 1: Exposure to debates increases **vote shares** for the candidate that performed the best in the debates
  - i. TE measured by vote choice in exit poll data (primary test) and in electoral returns (lower power, secondary test)
  - ii. Debate winner measured by audience ratings and expert assessment (i.e. two outcomes)
- b. Hypothesis 2: Exposure to debates increases the willingness to **vote across party lines**
  - i. TE measured by vote choice and ethnicity in exit polls (primary test, limited to members of affiliated tribes); reduced forecasting power of ethnic census shares on electoral returns (lower power, secondary test)<sup>vii</sup>
  - ii. Two additional measures expand the concept to incorporate non-affiliated tribes: voting for a different party for MP in 2012 than in 2007; and splitting ticket for MP (i.e. party MP different than party Pres)

- **Voting knowledge and behavior outcomes<sup>1</sup>**

- a. Hypothesis 3: Exposure to debates increases **political knowledge** and leads to more informed voting

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<sup>1</sup> Note that many of these questions are not relevant for certain candidates and issues in particular constituencies: i) PMDC candidates did not participate in the debates held in constituencies 32, 46 and 47, and did not run for office in 15 and 56; ii) the APC candidate did not participate in the debate in constituency 14; and iii) the free healthcare questions were omitted by the moderator in constituency 85.

- i. TE measured for general political knowledge as mean index on ability to name MP roles, CFF amount, healthcare entitlement, gender equity percentage
    - ii. TE measured for individual candidate attributes as ability to name candidates, distinguish better educated, public office experience, incumbency and more likely to report personal characteristic as primary determinant of voting choice
    - iii. TE measured for candidate policy stances by ability to correctly place candidate view on Gender equity, first priority issue, free health care implementation
  - b. Hypothesis 4: Exposure to debates increases **policy alignment**
    - i. TE measured on the empirical match between voter's position expressed in survey and reported stance of his/her selected candidate expressed in the debate on gender equity, priority issues, and free health care implementation. This alignment can result from persuasion and/or voters choosing aligned candidates, and we aim to unpack the two mechanisms.
    - ii. We aim to portion out potential drivers of policy alignment along a few dimensions
      - 1. Persuasion vs choosing aligned candidates: MP vote choice in 2007 and Presidential vote choice<sup>viii</sup> provide an indication of party loyalty. Greater policy alignment for voters whose 2013 MP choice matches these indicators is more suggestive of persuasion, while those whose choice differs is more suggestive of choosing aligned candidates
      - 2. Learning policy information vs partisan loyalty: Alignment driven purely by an effort to reduce dissonance between party preference and policy stance is less likely for voters from unaffiliated tribes, for less partisan issues (i.e. FHC is much more partisan than GEB or priority issue), and in constituencies where candidates from different parties articulated the same position. By contrast, voters moving into greater alignment with their predicted party position (as predicted by ethnicity or 2007 MP vote or Presidential vote) and the candidates diverged in the debate, is more suggestive of partisan loyalty

*\*\*\* NOTE: In the original plan Hypo 4 was two separate hypotheses, one on policy alignment and one on persuasion. As noted in the I-level PAP, we realized that the outcomes for policy alignment, be it from persuasion or choosing aligned candidates, were empirically equivalent, so have combined the two hypotheses into one and noted how we will attempt to distinguish the two mechanisms. Having two hypotheses covering the exact same outcomes was a mistake in the original plan.*

- c. Hypothesis 5: Exposure to debates enhances **voter openness** to other parties
        - i. TE measured by higher likeability ratings for all candidates (i.e. own party, rival party, and third party where applicable) in exit polls
- **Secondary outcomes**
  - a. Hypothesis 6: Exposure to debates mobilizes the public and leads to greater **turnout**
    - i. TE measured by turnout question in exit polls verified by enumerator ID card inspection (primary) and electoral returns (lower power, secondary)
 

*\*\*\* NOTE: As noted in the I-level PAP, after seeing the very high turnout rates in the Election (87.3%), we “demoted” the turnout hypothesis from primary to secondary as we would have insufficient power to detect treatment effects.*

- b. Hypothesis 7: Exposure to debates increases the perceived **legitimacy** of elections
  - i. TE measured by increasing confidence that elections are free and fair in exit polls  
*\*\*\* NOTE: we dropped an outcome about decreasing violence as 98.8% of controls indicated no violence on Election Day so we had no power to detect effects.*
- c. Hypothesis 8: Exposure to debates increases **interest in politics**
  - i. TE measured by question on frequency of discussing politics in exit poll and ability to name national candidates who were not involved in the debates (presidential candidates, and MP candidates who did not participate in the debates).  
*\*\*\* NOTE: we added the secondary outcomes of naming national candidates who did not participate in the debates in the revision.*
- d. Hypothesis 10: Exposure to debates **does not increase electoral misconduct**
  - i. Lack of TE documented by questions regarding police presence, inappropriate influence, election officials wearing party colors and election officials verbally encouraging specific vote choices<sup>ix</sup>  
*\*\*\* NOTE: Last two outcomes dropped due to insufficient variation: no reports of election officials wearing party colors and only 4 reports of officials or police verbally encouraging votes for a particular party.*

### 3. Domains B and C: Effects of PC-level Debates on Candidate and Party Campaigning

These two domains capture potential effects of the polling center-level screenings on the campaign strategies of candidates and political parties. As candidates and party officials are two different sets of actors we treat them as different domains but combine the exposition of the approach here as it is the same for both.

#### A. Econometric specification

Analysis of treatment effects will take the form of:

$$Y_{impc} = \beta_0 + \delta T_{pc} + X'_{ipc} \Pi + Z'_{pc} \Gamma + W'_{ipc} \Psi + c_p + \varepsilon_{ipc} \quad (3)$$

where outcome  $Y$  (i.e. receiving a gift) is measured for individual  $i$  in relation to candidate  $m$  where the individual is registered in polling center  $p$  within Parliamentary constituency  $c$ ;  $T$  is an indicator variable equal to one if the polling center received the debate video screening treatment;  $X$  is a vector of indicator variables that denote the stratification bin from which exit poll respondents were drawn (where the bins were constructed by age and gender);  $Z$  is a vector of indicator variables that denote the stratification bin from which the polling center was drawn (where the bins were constructed by number of registered voters and distance to nearest neighboring center);  $W$  is a set of additional control variables that will be determined from analysis of the control group data with an eye toward identifying individual characteristics of political gift receipt;  $c$  is a set of constituency-specific fixed effects (the level of debate and candidates); and  $\varepsilon$  is an idiosyncratic error term clustered at the polling center level. Data concerning candidate expenditure will come from the individual-level exit polls; while exit poll data (and analysis) for party support will come from (and be conducted at) the community-level. Hypotheses here are two tailed, as candidates and parties could plausibly treat campaign effort/expenditure as a substitute for the screening publicity, or they could compensate for the greater competitiveness of the race by allocating more effort/resources to treatment

areas. The main objective of these domains is to test whether campaign investment complements, substitutes or is unresponsive to treatment allocation.

We will further test for heterogeneous effects along three dimensions:

- **Debate performance:** As the response of candidates and parties could vary by how well their candidate performed in the debate, we will test for heterogeneous effects by relative debate performance and degree of performance divergence as measured by expert panel and audience rankings in the before/after debate survey.
- **Party:** budget and strategy may vary by party, so we will test for differential response from the incumbent (APC), opposition (SLPP) and third party (PMDC).
- **Competitiveness:**<sup>x</sup> size of response is likely decreasing in the expected vote margin.

## ***B. Hypotheses and Outcomes***

In what follows we organize hypotheses and outcomes by domain (candidate versus party).

- **MP Candidate outcomes**
  - a. Hypothesis 1: Candidate allocation of **campaign effort and expenditure** is responsive to debate publicity
    - i. TE measured by receipt of any campaign gift, type and value of the gift, number of candidate visits in the 6 weeks leading up to the Election
- **Party outcomes**
  - a. Hypothesis 1: Party allocation of **campaign support** is responsive to debate publicity
    - i. TE measured by allocation of number of visits by party officials and party candidates for all races, number of political rallies, number of posters and number of gifts distributed in the community in the 6 weeks leading up to the Election<sup>2</sup>

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<sup>i</sup>Instead of lodging an update, we just implemented the original analysis as written in the initial PAP.

<sup>ii</sup> Analysis moot: as we found no effect for the primary dimensions, we omit the secondary dimensions.

<sup>iii</sup> Only 4% of controls heard about the debate. The point estimate for the treatment effect is indeed positive and weaker in the voting returns data, which include satellite villages further away from the host polling center where the main screenings were held.

<sup>iv</sup> Analysis moot: high compliance with treatment assignment renders this no longer relevant.

<sup>v</sup> Analysis moot: strong positive correlation (0.93) between exit poll reports and official voting returns makes this no longer a concern.

<sup>vi</sup> Instead of modeling this we added general discussion of the multiple equilibria that could arise if taken to scale.

<sup>vii</sup> Analysis moot: as we found no effect for the primary test, we omit the secondary test.

<sup>viii</sup> Results using the Presidential vote choice measure mirror those for 2007 MP vote choice.

<sup>ix</sup> See endnote i.

<sup>x</sup> We find no heterogeneous effect by 2007 vote margin.

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<sup>2</sup> Note regarding interpretation: there is some overlap between the information collected for the party and the MP above. The questions on the community survey for party cover gifts from party officials and candidates for any office, where the offices are President, MP, Local Councillor and Council Chair.

## SIERRA LEONE 2012 ELECTIONS PROJECT

### PRE-ANALYSIS PLAN: INDIVIDUAL LEVEL INTERVENTIONS

PIs: Kelly Bidwell (IPA), Katherine Casey (Stanford GSB) and Rachel Glennerster (JPAL MIT)

PAP lodged 15 August 2013

*(We made no revisions to this plan. A set of endnotes provides additional explanation for areas of the PAP that receive little discussion in the main text of the manuscript.)*

This study examines the impact of providing citizens with information about Parliamentary candidates via structured inter-party debates in the lead up to the Sierra Leone November 2012 Elections. Randomization and treatments were conducted on multiple levels: constituency, polling center and individual (details on sampling and randomization are available in the project's AEA trial registry). This pre-analysis plan governs the analysis of the individual level treatments only. It was written and registered before analysis of the individual treatments data. It incorporates learning from analysis of the before/after screening data within the PC-level treatment sites.

#### 1. Background

Our NGO partner, Search for Common Ground (SFCG), hosted and filmed debates between Parliamentary candidates in 14 constituencies. In order to unpack the distinct types of information revealed by these debates, and the extent to which voters differentially react to such information, we implemented four separate treatment arms and two control arms in a crossed randomized design at the individual level. The arms aim to disentangle four different components of the debate that might impact voting behavior: i) objective information such as candidates' policy platforms and past experience; ii) less tangible indicators of candidate capacity such as candidates' interpersonal and persuasion skills, which signal greater productive ability on the job as an MP; iii) superficial information about candidates such as good looks and wealth; and iv) the social mobilization effect of the community gathering together to discuss politics.

The four treatment arms were as follows: i) the exact same debate screened in the polling-center level treatment but now delivered to an individual; ii) a "getting to know you" video of the same candidates speaking informally about their hobbies and interests; iii) a recording of an independent moderator or journalist summarizing the main policy positions articulated by the candidates during the debates; and iv) a "lab" experiment where respondents make quick inferences after being exposed to pairs of isolated images, short (20 second) video recordings, and a list of candidate names, all collected from MP races outside the respondents' district. The first two treatments were screened to individuals via tablet, the third via audio device and the fourth via a combination of pictures and video recordings on a tablet. At the time of treatment, individuals were surveyed both before and immediately after exposure to the treatment. A fifth control group was also surveyed. Respondents in all five arms were then surveyed again at Election time in the exit polls. We are interested in both short run effects, which are captured in the "After" survey data, as well as longer run effects captured the exit poll data. A sixth control group was not contacted at the time of treatment but was included in the exit poll. This second "pure" control group serves as a robustness check on the concern that the information conveyed by debates does not in fact matter but that instead the surveys and research activity simply increase the salience of the election and encourage greater deliberation in voting choice. We will test for this by comparing the first group of controls, who may be

primed to pay attention to the election through the experience of being surveyed, to these pure controls who are exposed to the same potential spillover effects but who first encounter the research teams in the exit polls after they have voted.

Within the 14 constituencies selected for participation in the debates, we first allocated polling centers to the polling-center level intervention and control group. This PC-level sample drew in VRCs that were sufficiently small (fewer than ~900 registered voters) and far apart from their nearest neighbor (at least ~ one mile). In constituencies where there were a sufficient number of polling centers left over after this process, we allocated the remaining larger and closer together VRCs into the individual-level treatment and control group, stratifying by number of registered voters and distance to nearest neighboring VRC. Within each of the treatment VRCs, households were divided into those with only female registered voters, only male, and both male and female registered voters (based on an earlier household listing exercise). We randomly assigned the six arms to households within each of these bins, and randomly selected respondents within each household to receive the individual-level treatments and/or survey(s).

## 2. Econometric Specifications

We are interested in the absolute treatment effect of each of the three treatment arms (debate, get to know you and radio report) compared to the control group, as well as the net or relative effect of each treatment arm compared to the other treatments. Analysis of the lab experiment treatment arm will be conducted separately. Analysis will take the following form:

$$Y_{ihtpc} = \beta_0 + \delta_t T_{htpc} + \mathbf{X}'_{hpc} \boldsymbol{\Pi} + \mathbf{Z}'_{pc} \boldsymbol{\Gamma} + \mathbf{W}'_{ihtpc} \boldsymbol{\Psi} + \mathbf{c}_p + \varepsilon_{ihtpc} \quad (1)$$

where outcome  $Y$  (i.e. vote choice) is measured for individual  $i$  living in household  $h$  assigned to treatment arm  $t$  registered in polling center  $p$  located in Parliamentary constituency  $c$ .  $T$  is a dummy variable indicating assignment to treatment arm  $t$ ;  $\mathbf{X}$  is a vector of indicator variables that denote the stratification bin from which the household was drawn (where the bins were determined by the gender composition of registered voters);  $\mathbf{Z}$  is a vector of indicator variables that denote the stratification bin from which the polling center was drawn (where the bins were constructed by number of registered voters and distance to nearest neighboring center);  $\mathbf{W}$  is a set of additional control variables that will be determined from analysis of the control group data and will vary by hypothesis with an eye toward identifying individual characteristics that do not vary with treatment and that help explain variation in a particular outcome (i.e. education and radio ownership are likely positively correlated with general political knowledge);  $\mathbf{c}$  is a set of constituency-specific fixed effects (the level of debate and candidates); and  $\varepsilon$  is an idiosyncratic error term clustered at the polling center level. Our main specification includes the full set of controls ( $\mathbf{X}$ ,  $\mathbf{Z}$  and  $\mathbf{W}$ ); we will also show results for the sparser specification that includes only the stratification variables as controls ( $\mathbf{X}$  and  $\mathbf{Z}$  only) as a robustness check.<sup>i</sup> For each treatment arm, the coefficient of interest is  $\delta_t$ , the average treatment effect for treatment  $t$  compared to the control group. The control group is defined as only the respondents in the first control arm for immediate outcomes in the After survey; and respondents in both the first and “pure” control arms for longer run outcomes in the exit poll survey. Participants in the Lab experiment arm, who were not exposed to any media concerning candidates from their own constituency, will also serve as controls. We will further conduct tests pooling multiple treatment arms together, for example  $\delta_{t \in D, R, G} \geq 0$ .<sup>ii</sup> We will further test a series of hypotheses about the relative effects of the different treatment arms that take the form  $\delta_t \geq \delta_{\sim t}$  explained below. For each arm and combination

of arms, we will examine immediate effects captured in the After survey<sup>iii</sup> as well as sustainable effects captured in the exit poll survey. Tests will be one-sided in the direction stated in the hypothesis, unless specified as two-sided. We will report treatment effects of all individual outcomes of interest as well as mean effects indices by hypothesis and sub-hypothesis as organized below.

### **Heterogeneous Effects<sup>iv</sup>**

We will test for heterogeneous treatment effects at the level of constituency, candidate and voter, adjusting for multiple inference within each level (i.e. grouping together the tests for all of the voter-level sub-groups when adjusting standard errors). Specifically we will test for differential effects along the following dimensions:

- **Competitiveness of constituency:** the impact of debates on voting choices is expected to be increasing in the competitiveness of the race, as measured by the (decreasing) margin between vote shares for first and second place MP candidates in the previous 2007 election. We will also test (two-sided) whether competitiveness differentially effects measures of policy alignment and likeability.
- **Candidate performance:** better debate performance (as measured by the expert panel) is expected to enhance the effects of debates on the ability of voters to correctly locate candidate's policy positions, and divergence in performance is expected to enhance treatment effects on votes for the debate winner.
- **Lesser known candidates (secondary):** voter response to strong (weak) performance by less well known candidates (including PMDC, female and non-incumbents) may be stronger than that for other better known candidates, as voters may have greater scope for updating their beliefs
- **Subgroup analysis:** the voting literature suggests that the impact of debates could vary by gender, age, and level of political informedness / naïvete. These tests will be two-sided. We further predict weaker effects for people who do not speak Krio well and may have had trouble understanding the debate.

### **Descriptive Analysis**

- **Dissipation of effects:** For each arm and hypothesis we will test for dissipation of effects by comparing the size of TE measured in the After survey to its equivalent in the Exit poll.

## **3. Hypotheses and Outcomes**

This part of our research agenda seeks to answer two broad questions: first, whether debates, get to know you and radio reports impact voting behavior; and second, if they do have an impact, what drives the effects of debates - information about policy or persona or both. Part of this second question concerns the speed with which voters can infer information about individual candidates.

Note that the set of outcomes available differs between the after survey and the exit poll, where in general the exit poll is a subset of the After survey (however a few items are only available in the exit poll). The list below is comprehensive of both sets, but tests of short- and longer-run effects will necessarily be limited to outcomes available in the respective datasets.

Notation: Individual level treatment arms are denoted by D = Debate; G = Getting to know you; R = Radio report; and L = Lab.

- **Vote choice outcomes**

- Tests to conduct:  $\delta_t \geq 0$  for  $t \in D, R, G$ ;  $\delta_{t \in D, R, G} \geq 0$ ;  $\delta_t \neq \delta_{\sim t}$  for  $t \in D, R, G$
- a. Hypothesis 1: Exposure to debates increases **vote shares** for the candidate that performed the best in the debates
  - i. TE measured by vote choice
  - ii. Debate winner / loser measured by audience ratings and expert assessment
- b. Hypothesis 2: Exposure to debates increases the willingness to **vote across party lines**
  - i. TE measured by vote choice and ethnicity (limited to members of affiliated tribes)
  - ii. Three additional (also primary) measures expand the concept to incorporate non-affiliated tribes: voting for a different party for MP in 2012 than in 2007; splitting ticket for MP (i.e. party MP different than party Pres or party LC); and voting for a party other than the self-reported party affiliation from before survey.
- c. *Mechanisms of impact*
  - i. **Policy stance and professional qualifications matter** for vote choice
    1. As the radio report isolates the impact of policy stances and professional qualifications information conveyed by debates from the persona aspects that are also revealed by debates,  $\delta_R \geq 0$  provides evidence in support of the role of these characteristics in voting decisions (Note that an absence of these effects for R does not on its own rule out the value of policy and professional background for vote choice.)
    2. For the debate treatment, we expect to see the impacts of debates on votes for the winning candidate to be increasing in the divergence between candidates in expert assessments of competence (professional qualification and connectedness).<sup>y</sup>
  - ii. **Candidate persona matters** for vote choice
    1. As the Get to know you video removes the policy content,  $\delta_G \geq 0$  provides evidence in support of the role that candidate persona and likeability play in vote choice

- **Voting knowledge and behavior outcomes**

- a. Tests to conduct:  $\delta_t \geq 0$  for  $t \in D, R$ ;  $\delta_{t \in D, R} \geq 0$ ;  $\delta_t \neq \delta_{\sim t}$  for  $t \in D, R$ . Note that G only relevant for subset of outcomes indicated below.
- b. Hypothesis 3: Exposure to debates increases **political knowledge** and leads to more informed voting
  - i. TE measured for general political knowledge includes ability to name MP roles, CFF amount, healthcare entitlement, gender equity percentage, the meaning of MP, who approves the government budget, and exact date of election. Note we do not expect heterogeneous effects on these measures across candidates or constituencies.

- ii. TE measured for individual candidate attributes includes ability to name candidates, distinguish better educated, greater public office experience and older candidates, incumbency and more likely to report personal characteristic as primary determinant of voting choice. Note distinguishing between candidates only applies where the characteristic diverges across candidates in the constituency.
  - 1. Include  $t = G$  for naming candidates and distinguishing better educated, more experienced and older candidates.
- iii. TE measured for candidate policy stances by ability to correctly place candidate view on Gender equity, first priority issue, free health care implementation, and CFF transparency; plus local policy issues (where available)<sup>vi</sup>
- c. *Mechanism of impact*
  - i. **Comprehension and attention** may vary by mode of information delivery. A finding that  $\delta_D > \delta_R$  for general political knowledge questions (H3) suggests that debates may better engage the audience than radio summaries. Check for waning attention by placement of knowledge questions in the program (i.e. MP roles at the beginning, date of election at the end)
  - ii. For D, the impact on correctly locating candidate positions should be increasing in the performance of the candidates in answering policy questions as assessed by the expert panel.<sup>vii</sup>
- d. Hypothesis 4: Exposure to debates increases **policy alignment**
  - i. TE measured on the empirical match between voter's position expressed in survey and reported stance of his/her selected candidate expressed in the debate on gender equity, priority issues, and free health care implementation. This alignment can result from persuasion and/or voters choosing aligned candidates, and we aim to unpack the two mechanisms using the before and after data.
- e. *Mechanism of impact:*
  - i. **Persuasion** reflects voters adopting their preferred candidate's policy stances (i.e. because they are convinced by the candidate's arguments, learn something about the policy from the debates, and/or are reducing cognitive dissonance between their candidate and policy preferences). These measures will be tailored by constituency to reflect candidate positions expressed in the debate, but in most cases we expect APC-(SLPP-)leaning voters to express a more positive (negative) view of FHC implementation compared to their counterparts in control areas, and for treated voters to report greater support of the GEB. A before/after test limits the sample to voters whose candidate choice matches their pre-stated party loyalty (i.e. holding party choice constant) and checks for improved alignment in the after survey. Limiting the sample to Independent voters and those of historically unaffiliated tribes is another test, both for policy alignment and more generally for changing voter positions on issues irrespective of vote choice. Power for these tests, however, will likely be low given small sample sizes.
  - ii. **Choosing aligned candidates** reflects moving to a candidate whose policy positions match the voters *ex ante* policy preferences. These measures will be tailored by constituency to reflect the actual divergence amongst candidates. A

before/after test focuses on the voters policy preference stated in the before survey and looks for differential improvements in alignment in constituencies where the candidates diverge on a particular issue compared to constituencies where all candidates agree.

- iii. Finding that  $\delta_D > \delta_R$  for measures of policy alignment provides evidence for the impact of *productive intangibles* related to MP job performance not easily captured by policy positions and professional background. Finding  $\delta_G \geq 0$  for measures of candidate education and professional experience (H3) suggests that these attributes may be conveyed by pattern of speech and presentation.
- f. Hypothesis 5: Exposure to debates enhances **voter openness** to other parties
  - i. TE measured by higher likeability ratings for all candidates (i.e. own party, rival party, and third party where applicable) in exit polls
    - 1. Include  $t = G$
  - g. *Mechanism of impact:*
    - i. Finding that  $\delta_D > \delta_R$  and  $\delta_G > 0$  for measures of candidate **likeability** suggests that voters value the general affability of candidates
- **Thin slice outcomes**<sup>viii</sup>
  - a. Hypothesis 10: **Thin slices of information** enable voters to make accurate inferences about individual candidate attributes
    - i. Benchmark test 1: Inferences regarding *facial competence from photos*: test whether voter inferences about leadership ability and their voting preference after viewing photos predict the winners of MP races with an accuracy greater than chance
    - ii. Benchmark test 2: Inferences regarding *productive intangibles from public speaking*: test whether voter inferences about leadership ability and their voting preference after viewing video clips predict the winners of debates and MP races with an accuracy greater than chance
  - b. *Mechanism of impact:*
    - i. *Productive intangibles are more important than purely superficial cues* for voting preference: accuracy of benchmark test 2 > benchmark test 1
    - ii. If accurate, explore which inferences are most correlated with predictive power, i.e. judge to be better leader vs better looking?
- **Secondary outcomes** See details in PC-level PAP
  - a. Hypothesis 6: Exposure to debates mobilizes the public and leads to greater **turnout**
    - i. TE measured by turnout question in exit polls
    - ii. Note we are “demoting” this hypothesis to secondary since turn out in the actual election was extremely high (87.3%) and we thus expect to have insufficient power to detect treatment effects on this outcome, but are retaining it in the analysis as we expect it to be of general interest
  - b. Hypothesis 7: Exposure to D, G and R increases the perceived **legitimacy** of elections
  - c. Hypothesis 8: Exposure to D, G and R increases **interest in politics**

## Additional Secondary Questions

- Hypothesis 12: **Social mobilization**, the community gathering aspect of the polling center-level treatment intensifies the effect of the debate on voter behavior
  - a. TE measured by comparing the TE of the I-level D to the PC-level D. If comprehension and other effects are similar, but other effects are lower for I-level, conclude that the community gathering aspect had a separate effect from the content.
- Hypothesis 13: Effect of treatments is not just **priming** / getting people to focus on the election
  - a. TE measured as no differences between pure controls and surveyed controls in Individual T implementation areas (note: both subject to the same potential spillovers from speaking with neighbors in other T arms, but only the surveyed one is primed)
- Hypothesis 14: Debates do not **increase ethnic voting**<sup>ix</sup>
  - a. Check whether exposure to D and G increases the ability of voters to correctly guess individual candidate ethnicity
  - b. In L, check that ability to guess individual ethnicity based on names (which are printed on ballot) and photos (which are posted outside polling stations) is at least as strong as that based on video clips (which are additional information revealed by debates)

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<sup>i</sup> Using the sparser model does not change the results substantially.

<sup>ii</sup> Analysis moot: we find significant effects for the debates arm on its own, so do not need to pool to increase power.

<sup>iii</sup> Analysis moot: as we find strong persistence in treatment effects, the analysis of immediate post-survey effects is used only to estimate the degree of decay over time.

<sup>iv</sup> Analysis moot: given that we find little evidence for heterogeneous effects in the larger polling center-level dataset, we omit that analysis for this dataset.

<sup>v</sup> Analysis moot: see endnote iv.

<sup>vi</sup> Local policy issues do not standardize across constituencies so were not included in the exit poll survey.

<sup>vii</sup> Analysis moot: see endnote iv.

<sup>viii</sup> The lab experiments are analyzed in our related work.

<sup>ix</sup> See endnote viii.

**SIERRA LEONE 2012 ELECTIONS PROJECT**  
**PRE-ANALYSIS PLAN: CONSTITUENCY LEVEL INTERVENTIONS**

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PAP originally lodged 2 June 2014.  
PAP revised and re-lodged on 13 March 2015.

*\*\*\*NOTE: The “track changes” pdf version of this PAP available in our AEA trial registry contains a transparent record of every single change we made to the original June 2014 plan. As that document is not very user friendly, here we present the clean text and flag the substantive changes in italics. The main thing the March revision did was to specify exact outcome measures, all preceded by “→ specific indicator =” below. Also, a set of endnotes provides additional explanation for areas of the PAP that receive little discussion in the main text of the manuscript.*

This study examines the impact of providing citizens with information about Parliamentary candidates via structured inter-party debates in the lead up to the Sierra Leone November 2012 Elections. Earlier PAPs govern the analysis of treatment effects on voter behavior and candidate/party response up through Election Day. This pre-analysis plan sets out the main parameters of analysis for post-Election effects of debates on the behavior of election winners who are now serving in Parliament, over the course of their first year to 18 months in office. The research design corresponds to the highest level of randomization for this project, where 14 of what we expected to be the 28 most closely contested constituencies were randomly assigned to participation in debates and the remaining 14 were assigned to the control group. This plan was lodged in the AEA trial registry on June 2, 2014, which is before any data analysis began, and before much of the data collection was completed (where the current anticipated completion of fieldwork for the suite of CFF surveys is June 7<sup>th</sup>, 2014, and data entry from these paper surveys will follow).

A key part of this analysis is an attempt to substantiate on the ground the development expenditures the MPs claimed to have made under their first annual constituency facilitation fund (CFF) and post-election engagement with constituents. The fieldwork plan for this involves triangulation of responses across a number of different respondents and surveys, each of which may be more or less informed and credible, which will complicate data analysis. Our plan moving forward is thus to: i) lodge this initial PAP before field work ends to lock in our main domains of hypothesized effects; ii) enter and clean all survey data; iii) analyze data from the control sample only to generate a more specific list of indicators across surveys and analysis procedures; iv) data enter and code official Parliamentary records by topic; v) lodge an update to this plan with more specific indicators and strategies of triangulation across sources; and v) conduct analysis of treatment effects. The advance analysis of the control sample (item iii above) aims to accomplish a few objectives. First, we will assess variation in outcome measures and baseline levels of activity, to refine the set of outcomes sensible for analysis. Second, we will test our operating assumptions that residents in the constituency headquarter towns (respondents in the main town CFF surveys) have good information about MP activity throughout the constituency and are relatively similar in their views of MP performance compared to those in smaller villages. To do so, we will use the target village responses as a cross check. If we find that either of these assumptions do not hold empirically, we will devise a strategy for how best to make use of the information collected in the (non-random) target village sample. Third, we will assess how well we can determine the accuracy of responses from different sources. We anticipate that the judgments by our enumerators on the relative truthfulness across respondents will be sufficient here, but if

we find that the enumerators were unable to make decisive rankings and that there is considerable differences in view across respondents, then we will develop a strategy for balancing and reconciling conflicting reports.

**Key caveat:** It is important to note that power at this level is limited due to the small sample, so we will be particularly cautious in interpreting a lack of evidence of treatment effect as suggestive of evidence of no effect in practice.

\*\*\* *NOTE: the revision added the following text:* “With N=28, we also do not have power to adjust for multiple inference. If we have to pick one hypothesis where we have the strongest a priori interest and thus where the per comparison p-value is most relevant, it is Hypo D (CFF spending).”

## 1. Background

All candidates in the 28 constituencies were surveyed in the pre-Election period. After that, the control group in the 14 control constituencies were otherwise not contacted by the research team. Candidates in the treatment group were invited to participate in a structured inter-party debate that was moderated and filmed by our NGO partner, Search for Common Ground. The debates were then taken on a polling-center level “road show” in a randomly selected 112 of 224 polling centers plus an additional 85 screenings in satellite villages. We estimate that roughly 19,000 individuals were exposed to this treatment. Additional individual-level screenings were held in a separate set of 40 polling centers. Early in their tenure, winners in the treatment group were shown a video of the debate they participated in, edited down to include only their own statements, to remind them of the commitments they made during the debate and explain how many of their constituents saw the debate via the road show. The research hypothesis is that the publicity of the debates screenings could help solve the candidate commitment problem and thereby enhance the consistency of elected MP behavior with their pre-election promises and generally enhance accountability pressure toward better performance in office.

**Second caveat:** There are two key ways in which the roadshow treatment is considerably less intense than other obvious ways to disseminate the debates to voters. First, the road show was shown to a relatively small subset of constituents: a back of the envelope calculation would put this figure at around 3%.<sup>i</sup> Broader dissemination, e.g. via radio, would reach many more. Second, the MPs themselves were not present at these screenings, so if the winners did not understand or internalize the number of constituents exposed, it is unlikely to affect their future behavior.

Data for this segment of the analysis draws on multiple sources: i) the official Votes and Proceedings produced by Parliament administration (V&Ps); ii) the official Hansards produced by Parliament administration; iii) committee assignments and minutes of committee meetings, produced by committee clerks; iv) MP candidate pre-election survey; v) winning MP post-election follow-up survey (supplemented with post-survey follow-up phone calls to clarify CFF project locations and expenditures); vi) CFF main community questionnaire; vii) CFF clinic follow-up questionnaire; viii) CFF verification sheet; ix) CFF school follow-up questionnaire; and x) CFF Target village community questionnaire. The first 8 sources apply to all MPs in a standard and equal fashion. The last two sources do not, as they are sampled based on MP reports about the location of school support and general development projects, and are intended primarily as an input into the verification sheet. We will also use information from these latter two sources descriptively to cross check our main assumptions about the level of informedness of main town and clinic respondents and their similarity to more rural constituents.

Econometric specification:

$$Y_{ic} = \beta_0 + \beta_1 T_c + \mathbf{X}_i' \boldsymbol{\Gamma} + \lambda_c + \varepsilon_{ic}$$

where  $Y_{ic}$  is outcome for MP  $i$  in constituency  $c$ ,  $T_c$  is an indicator signaling that the constituency was assigned to the debates participation treatment,  $\mathbf{X}_i$  is a vector of MP-level controls {gender, public office experience} chosen for their contribution to increasing  $R^2$  in the control group data, and  $\lambda_c$  are fixed effects for the randomization strata used in the constituency-level assignment (3 bins of raw ethnic bias). The primary specification will include  $\mathbf{X}_i$  and the robustness check will exclude  $\mathbf{X}_i$ .

\*\*\* *NOTE: details of the econometric specification were added in the revision.*

## 2. Domain D: Effects of PC-level debates on Elected Officials - Hypotheses and data sources

This sections specifies the main areas of hypothesized effects and lists the corresponding sources of data. In general, we will look for effects in both “hard facts,” for example CFF expenditures that are verified via field visits, as well as in MP behavioral or priming responses, where they may be more likely to claim better performance in self-reports.

### A. Activity in Parliament

Hypothesis: Accountability pressure of constituent exposure to debates is expected to increase the activity and engagement level of elected MPs. All tests are one-sided towards increased activity. Relevant indicators:

- i) **Attendance** in Parliamentary session as recorded in the V&Ps → specific indicator = percent of all 2012-13 sittings attended
- ii) **Participation** via making public statements in Parliamentary sessions as recorded in the V&Ps and Hansards → specific indicator = total number of comments made over all 2012-13 sittings
- iii) **Committee** membership
  - a. Number of committees serving on as compiled by the Clerk of Parliament → specific indicator = total number of committees as of Q1 2015 report from Clerk of Parliament
  - b. Attendance in committee meetings as recorded by committee clerks. This data will need to be assessed for completeness and accuracy before proceeding with analysis as many MPs serve on multiple committees and recordkeeping may vary substantially across clerks.  
\*\*\**NOTE: we dropped this outcome as attendance records nonexistent for many committees.*
- iv) **(Secondary) Self-reported** MP activity in follow-up survey regarding discussing topics with other MPs, raising issues during committee meetings, and other promotional work (GEB: Q17, 18, Issue: Q21, 22, 23)<sup>ii</sup>

### B. Consistency with pre-election promises

Hypothesis: The publicity of the debates helps solve the candidate commitment problem and makes their post-election behavior in Parliament more consistent with their pre-Election promises. All tests are one-sided towards increasing consistency. Relevant indicators:

- i) Participation in **Parliamentary session in key priority areas**, where pre-election priorities were collected in the MP candidate survey and in the debates for treated MPs, and post-election participation is recorded in the V&Ps and Hansards → specific indicator = total number of comments during an agenda item relating to priority sector over all 2012-13 sessions
- ii) **Voting** in accordance with pre-election stated preferences for the Gender Equity Bill (when it arises in Parliament); for the Freedom of Information Bill; and votes that relate to the sectors specified as first priority issues as recorded in V&Ps and Hansards (relevant votes need to be identified and coded)  
 \*\*\* NOTE: we dropped this outcome due to lack of variation: the GEB has not yet been voted on and the FIB was passed unanimously, as were bills in priority sectors
- iii) **Membership in committees** that govern stated key priority issues → specific indicator = # of committees member of in priority issue areas in Q1 2015 report from Clerk of Parliament
- iv) **Constituent assessment of consistency with and performance in promoting** priority areas in CFF Main Town (QC5-C14 in main;) → specific indicator = # respondents saying “yes” that MP focuses on priority sector / total # main town respondents (note: main town assessment of “performance promoting the sector” near perfectly correlates with this measure, so we are including only this one)
- v) **(Secondary) Correspondence between MP self-reports** in pre- and post-Election surveys (GEB Q15, Issue Q19, CFF Q24, Transparency Q25)

### C. Constituency engagement

Hypothesis: Accountability pressure of constituent exposure to debates is expected to increase post-election engagement with constituents. All tests are one-sided towards increased engagement. Relevant indicators:

- i) Number of **visits** to constituency as verified across the CFF main community and clinic surveys (QM2-5 in Main and M2-5 in Clinic)→ specific indicator = average # of visits over all respondent reports. Code “77 – too many to count” and “resides locally” to the max{5, max mean in full sample}
- ii) Number of **substantive meetings** held with constituents as verified across the CFF main community survey (Main QM6-8, with truthfulness check QM8)→ specific indicator = average # meetings over all respondent reports
- iii) Overall assessment of **doing a good job** → specific indicator 1 = average # of reports of doing a good job in any sector (C7-C14) over all main town respondents; specific indicator 2 = average # of reports of doing a good job in health (C15) over all clinic respondents  
 \*\*\* NOTE: outcome added in the revision
- iv) **(Secondary) Self-reported visits** to constituency in the MP follow-up survey (Q28-30)
- v) **(Secondary) Self-reported number of substantive meetings** in the MP follow-up survey (Q31-32)
- vi) **(Secondary) Number of clinic oversight visits** captured in clinic survey (QC1-5)

### D. CFF spending

Hypothesis: Accountability pressure of constituent exposure to debates is expected to increase development expenditure under the CFF (and potentially through mobilizing other funds, TBD). All tests are one-sided towards increased engagement. Relevant indicators:

- i) Overall **proportion of CFF funds spent** that can be verified and **were dedicated toward constituency development** as opposed to transport. (Note this is one unified indicator as we had no way to independently verify self-reported transport expenditures) Many sources to this, but primary metric should be summarized in the CFF verification sheet. Triangulation from: CFF projects in Main (QC15-17; and Section P); Target (QC18-19, and Section P); contributions to clinic development (QC6-9 in clinic survey); contributions to scholarships and school development (QC3-9 in school survey); and note truthfulness assessment questions at end of relevant sections → specific indicator = amount of development funds verified in the field from the verification sheet / 43.8 M leone allocation
- ii) **(Secondary) Self-reported** expenditures in MP follow-up survey (Q33) and post-survey clarification phone calls – proportion reported and proportion for development;
- iii) **(Secondary) Self-reported biggest accomplishments** as MP in follow-up survey (Q34)

### 3. Descriptive analysis

These surveys also were designed to collect indicators that flesh out other areas of primarily descriptive analysis.

- A. Descriptive analysis<sup>iii</sup> of Target village and School survey responses to questions about MP consistency, MP visits, meetings, and performance
- B. MP self-reports of participation in key areas will be used to select relevant Hansards<sup>iv</sup> and cross-check official records in MP follow-up survey: Q13-14 general debate, Q16 GEB, Q20 priority issue, Q26-27 on Freedom of info to both cross check and potentially add nuance to TE estimate of accountability and activity level if find variation in abstention or failed participation attempts
- C. Content or textual analysis of the V&Ps and Hansards<sup>v</sup>

Two other areas relate to earlier stages of the research design but the data for which was collected in the MP follow-up survey that this plan governs.

- D. Secondary data on party response to assignment of treatment and control in MP follow-up survey Q8-9 campaign support<sup>vi</sup>
- E. Check on T/C balance and/or (rule out) party selection response to treatment assignment in MP follow-up survey Q10-12 quiz questions. Supplement this with data on candidates in pre-election survey

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<sup>i</sup> A more accurate estimate is 6%.

<sup>ii</sup> Drop Q22 and Q23 due to lack of variation: all MPs reported doing these activities and there is no additional data to assess strength of claim.

<sup>iii</sup> The main town respondents proved sufficient.

<sup>iv</sup> We data entered all Hansards.

<sup>v</sup> Analysis moot: MPs in the sample made on average only 4 comments in total.

<sup>vi</sup> Results for campaign support mirror those in Appendix Table A.5.

**Appendix Table A.1: Balance across Treatment Assignment**

	Control mean (1)	Treatment mean (2)	Without strata Diff. (3)	Std. err (4)	With strata Diff. (5)	Std. err (6)	Obs. (7)
<b>Panel A: Voters</b>							
Age	40.31	40.00	-0.31	0.47	-0.30	0.45	5,413
Farmer	0.83	0.81	-0.02	0.03	-0.02	0.02	5,260
Female	0.52	0.52	0.00	0.01	0.00	0.01	5,414
Does not speak Krio	0.21	0.19	-0.01	0.03	-0.01	0.02	5,414
Married polygamously	0.27	0.28	0.01	0.03	0.01	0.02	5,414
Household owns a radio	0.69	0.69	-0.01	0.03	-0.01	0.02	5,405
Years of schooling	1.81	1.95	0.14	0.19	0.14	0.13	5,409
Voted for the APC MP candidate in 2007	0.60	0.60	0.00	0.05	0.00	0.02	4,520
Member of ethnic group historically loyal to the APC	0.62	0.60	-0.02	0.06	-0.03+	0.02	4,740
Member of ethnic group historically unaffiliated	0.13	0.12	-0.01	0.03	-0.01	0.02	5,412
Target respondent replaced with alternate respondent	0.10	0.09	-0.01	0.01	-0.01	0.01	5415
<b>Panel B: Candidates</b>							
Age	48.36	45.22	-3.13	2.38	1.39	3.84	64
Female	0.06	0.14	0.07	0.07	0.14	0.14	67
Sitting incumbent MP	0.23	0.14	-0.09	0.08	-0.07	0.17	67
In last job, managed ten or more employees	0.38	0.37	-0.01	0.12	0.07	0.20	64
Any elected office experience	0.42	0.19	-0.22*	0.09	-0.21	0.18	67
Quiz score naming line ministry counterparts (of 3)	1.03	0.78	-0.26	0.22	-0.31	0.39	66
Member of ethnic group historically unaffiliated	0.17	0.14	-0.03	0.12	-0.15	0.13	66
Years of schooling	14.76	14.47	-0.29	0.55	-0.65	0.83	65
<b>Panel C: Winning MPs</b>							
Age	46.00	47.50	1.50	3.80	1.39	3.82	26
Female	0.07	0.21	0.14	0.13	0.14	0.14	28
Sitting incumbent MP who won re-election	0.29	0.21	-0.07	0.17	-0.07	0.17	28
In last job, managed ten or more employees	0.58	0.64	0.06	0.20	0.07	0.20	26
Any elected office experience	0.50	0.29	-0.21	0.19	-0.21	0.18	28
Quiz score naming line ministry counterparts (of 3)	1.15	0.86	-0.30	0.39	-0.31	0.39	27
Member of ethnic group historically unaffiliated	0.23	0.07	-0.16	0.14	-0.15	0.13	27
Years of schooling	16.00	15.36	-0.64	0.77	-0.65	0.80	26
2012 winning margin (1st vs 2nd place finisher)	0.49	0.46	-0.03	0.07	-0.03	0.06	28
<b>Panel C: Constituencies</b>							
Distance from constituency centroid to Freetown (km)	148.21	150.69	2.48	37.90	2.48	31.92	28
Distance from centroid to district headquarters (km)	26.82	28.28	1.46	6.56	1.46	6.54	28
Distance from centroid to nearest major road (km)	7.13	8.81	1.68	3.52	1.68	3.36	28
Total kilometers of major roads in the constituency	36.69	28.68	-8.02	10.35	-8.02	10.62	28
Expected ethnic-party bias, absolute value, range: [0,1]	0.54	0.47	-0.07	0.08	-0.07+	0.04	28
Total registered voters	24,848	23,072	-1,777	3,520	-1,777	3,482	28
Seat changed parties in previous (2007) election	0.29	0.21	-0.07	0.17	-0.07	0.17	28
Sitting MP incumbent is a candidate in the race	0.43	0.36	-0.07	0.19	-0.07	0.19	28
2007 winning margin (1st vs 2nd place finisher)	0.28	0.26	-0.02	0.06	-0.02	0.06	28
Population share of unaffiliated ethnic groups	0.12	0.13	0.00	0.05	0.00	0.05	28

Notes: This table compares average characteristics of observations assigned to treatment and control groups. Panel A concerns voters as a validation of the polling center randomization procedure, while panels B-D validate the constituency level randomization. In this analysis: i) significance levels indicated by +  $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$  based on two-sided tests; ii) robust standard errors clustered by polling center in panel A, and by constituency in panel B, conventional OLS standard errors in panels C and D; and iii) estimates in columns 3-4 exclude the randomization strata and in 5-6 include the strata.

**Appendix Table A.2: Balance Across Individual Treatment Arms**

	Debates		Get to know you		Radio report		Lab controls		Pure controls		Surveyed controls	
	Mean (1)	Std. error (2)	Mean (3)	Std. error (4)	Mean (5)	Std. error (6)	Mean (7)	Std. error (8)	Mean (9)	Std. error (10)	Mean (11)	Std. error (12)
Age	42.62	0.85	41.35	0.83	41.24	0.89	41.82	0.83	42.33	0.86	42.62	0.71
Farmer	0.72	0.02	0.76	0.02	0.77	0.02	0.75	0.02	0.76	0.02	0.78	0.02
Female	0.52	0.03	0.54	0.03	0.54	0.03	0.54	0.03	0.55	0.03	0.54	0.02
Does not speak Krio	0.17	0.02	0.18	0.02	0.16	0.02	0.21	0.02	0.19	0.02	0.19	0.02
Married polygamously	0.40	0.03	0.31	0.02	0.34	0.02	0.34	0.02	0.30	0.02	0.37	0.02
Household owns a radio	0.65	0.02	0.59	0.03	0.62	0.03	0.62	0.02	0.59	0.03	0.62	0.02
Years of schooling	2.54	0.21	2.16	0.20	2.17	0.20	2.03	0.19	1.89	0.17	2.20	0.16
Voted for the APC MP candidate in 2007	0.64	0.03	0.71	0.03	0.65	0.03	0.69	0.03	0.68	0.03	0.68	0.02
Member of ethnic group historically loyal to APC	0.71	0.02	0.72	0.02	0.72	0.02	0.75	0.02	0.72	0.02	0.73	0.02
Member of ethnic group historically unaffiliated	0.10	0.02	0.07	0.01	0.09	0.01	0.08	0.01	0.07	0.01	0.08	0.01
Respondent attrition in exit poll	0.07	0.01	0.08	0.01	0.06	0.01	0.04	0.01	0.06	0.01	0.07	0.01
Observations	399		402		392		407		399		601	

Notes: This table presents the mean and standard error of respondent characteristics in the six different treatment arms administered at the individual level to validate the random assignment procedure. No randomization strata are included.

**Appendix Table A.3: Raw Results for Voter Outcomes**

	Treatment effect (1)	Standard error (2)	p-value 2-sided (3)	N (4)
<b>Panel A1. Political knowledge - Mean effects index</b>	<b>0.284</b>	<b>0.028</b>	<b>0.000**</b>	<b>5,415</b>
i. Knows amount of the constituency facilitation fund	0.141	0.018	0.000**	5,414
i. Knows who is entitled to free healthcare (FHC)	0.059	0.033	0.075+	5,414
i. Knows the gender equity bill (GEB) is 30%	0.013	0.030	0.677	5,413
i. Knows MP job responsibilities (out of 3)	0.225	0.070	0.001**	5,415
ii. Candidate choice driven by individual characteristic	-0.008	0.028	0.762	5,242
ii. Knows which candidates had been an MP before	0.113	0.033	0.001**	5,415
ii. Knows which candidate was most educated	0.162	0.044	0.000**	3,109
ii. Knows candidate with most public office experience	0.081	0.037	0.031*	2,978
ii. Knows APC candidate's name	0.184	0.034	0.000**	5,073
ii. Knows PMDC candidate's name	0.109	0.031	0.000**	3,299
ii. Knows SLPP candidate's name	0.171	0.032	0.000**	5,415
iii. Knows APC candidate's first priority issue	0.089	0.030	0.003**	5,072
iii. Knows PMDC candidate's first priority issue	0.066	0.026	0.011*	3,296
iii. Knows SLPP candidate's first priority issue	0.150	0.028	0.000**	5,413
iii. Knows APC candidate's view of FHC	0.198	0.035	0.000**	4,593
iii. Knows PMDC candidate's view of FHC	0.009	0.036	0.800	2,820
iii. Knows SLPP candidate's view of FHC	0.072	0.029	0.013*	4,935
iii. Knows APC candidate's position on GEB	0.097	0.035	0.006**	5,073
iii. Knows PMDC candidate's position on GEB	0.212	0.053	0.000**	3,299
iii. Knows SLPP candidate's position on GEB	0.157	0.038	0.000**	5,415
<b>Panel A2. Policy alignment - Mean effects index</b>	<b>0.105</b>	<b>0.035</b>	<b>0.003**</b>	<b>5,415</b>
Voter's view on FHC matches that of chosen candidate	0.092	0.035	0.008**	4,727
Voter's view on GEB matches that of chosen candidate	-0.024	0.024	0.313	5,160
Voter's priority issue matches that of chosen candidate	0.090	0.031	0.004**	5,160
<b>Panel A3. Votes for best candidate - Mean effects index</b>	<b>0.078</b>	<b>0.044</b>	<b>0.074+</b>	<b>5,415</b>
Voted for debate winner, as judged by audience	0.047	0.021	0.029*	5,225
Voted for debate winner, as judged by expert panel	0.009	0.022	0.666	5,225
<b>Panel A4. Votes across ethnic-party lines - Mean effects index</b>	<b>-0.019</b>	<b>0.031</b>	<b>0.543</b>	<b>5,415</b>
Voted across ethnic-party lines	-0.011	0.013	0.394	4,574
Voted for a different party for MP than did in 2007	0.005	0.019	0.776	4,410
Split ticket across parties for MP vs President	-0.008	0.010	0.399	5,217
<b>Panel A5. Voter openness to candidates - Mean effects index</b>	<b>0.090</b>	<b>0.048</b>	<b>0.062+</b>	<b>5,415</b>
Voter likeability rank for APC candidate (10 point scale)	0.161	0.261	0.538	5,073
Voter likeability rank for own party's candidate	0.245	0.237	0.301	5,160
Voter likeability rank for PMDC candidate	0.579	0.273	0.034*	3,299
Voter likeability rank for rival party's candidate	0.117	0.226	0.606	4,906
Voter likeability rank for SLPP candidate	0.229	0.230	0.319	5,414
<b>Panel A3 Alternate: NEC Official Returns</b>				
Vote share of debate winner, as judged by audience	0.035	0.017	0.067+	206
Vote share of debate winner, as judged by expert panel	0.035	0.016	0.053+	206

Notes: This table replicates estimates from Tables 1 and 2 under the conservative specification of no control variables and two-sided tests. In this analysis: i) significance levels +  $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$  based on two-sided tests; ii) robust standard errors clustered by polling center; iii) specifications include only stratification bins for the polling center (number of registered voters and distance to next nearest), respondent (youth status and gender) and constituency fixed effects; iv) data source is the exit poll survey in panels A1-A5 and the National Electoral Commission polling center-level returns in A3 Alt; and v) NEC returns exclude constituency 15 where the SLPP candidate was disqualified immediately before the election.

**Appendix Table A.4: Raw Results for Candidate and Politician Outcomes**

	Treatment effect (1)	Standard error (2)	<i>p</i> -value (2 sided) (3)	N (4)
<b>Panel A: Candidate Campaign Spending</b>				
<b><i>Hypothesis B1. Campaign response, mean effects index</i></b>	<b>0.104</b>	<b>0.039</b>	<b>0.008**</b>	<b>5,415</b>
Received any gift from the APC candidate	0.011	0.027	0.686	5,071
Received any gift from the PMDC candidate	0.014	0.006	0.024*	3,220
Received any gift from the SLPP candidate	0.008	0.020	0.690	5,413
Value of gift received from APC candidate (in log(value+1))	0.118	0.098	0.226	5,005
Value of gift received from PMDC candidate (in log(value+1))	0.035	0.015	0.016*	3,213
Value of gift received from SLPP candidate (in log(value+1))	0.080	0.064	0.210	5,362
Voter report of number of APC candidate visits to village	0.149	0.139	0.282	5,072
Voter report of number of PMDC candidate visits to village	0.218	0.093	0.019*	3,299
Voter report of number of SLPP candidate visits to village	0.077	0.187	0.678	5,415
<b>Panel B: Accountability of Elected MPs</b>				
<b><i>Hypothesis E1. Activity in Parliament, mean effects index</i></b>	<b>0.166</b>	<b>0.267</b>	<b>0.534</b>	<b>28</b>
Percent of 2012-13 sittings attended (out of 57 sittings in total)	4.225	3.105	0.174	28
Total number of public comments in Parliamentary sittings 2012-13	-1.214	1.906	0.524	28
Committee membership (total number)	0.429	0.557	0.442	28
<b><i>Hypothesis E2. Consistency with pre-election promises, mean index</i></b>	<b>-0.279</b>	<b>0.211</b>	<b>0.187</b>	<b>28</b>
Total public comments in priority sector agenda items	-0.149	0.149	0.317	27
Membership in priority sector committee	0.120	0.185	0.517	27
Constituent assessment of focus on priority sector	-0.352	0.142	0.013*	27
<b><i>Hypothesis E3. Constituency engagement, mean effects index</i></b>	<b>0.713</b>	<b>0.303</b>	<b>0.019*</b>	<b>28</b>
Total number of constituent visits	1.169	0.595	0.049*	28
Total number of public meetings held with constituents	1.006	0.575	0.080+	28
Total number of sectors constituents assess good performance	0.875	0.435	0.044*	28
Health clinic staff reported good performance in health	0.155	0.139	0.265	28
<b><i>Hypothesis E4. CFF spending, mean effects index</i></b>	<b>1.024</b>	<b>0.577</b>	<b>0.076+</b>	<b>28</b>
Development spending verified in the field (as % of 2012 CFF)	49.465	29.313	0.105	27
<b><i>Domain E. All 11 outcomes, mean effects index</i></b>	<b>0.322</b>	<b>0.146</b>	<b>0.028*</b>	<b>28</b>

Notes: This table replicates estimates from Tables 3 and 5 under the conservative specification of no control variables and two-sided tests. In this analysis: i) significance levels +  $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$  based on two-sided tests; ii) robust standard errors clustered by polling center in Panel A; iii) the standard error (and associated  $p$  value) presented in Panel B is the maximum value from conventional OLS and bias corrected HC<sub>2</sub> estimators in MacKinnon and White (1985), following discussion in Angrist and Pischke (2009); iv) specifications in Panel A include only randomization stratification bins for the polling center (number of registered voters and distance to next nearest), respondent (youth status and gender) and constituency fixed effects; v) specifications in Panel B include only the 3 randomization stratification bins of ethnic-party bias; and vi) mean effects index constructed following Kling, Liebman and Katz (2007) and expressed in standard deviation units.

**Appendix Table A.5: Domain C - Treatment Effects of Polling Center Screenings on Party Officials**

	Control mean	Treatment effect	Standard error	Naïve p-value (2 sided)	FDR q-value	N
	(1)	(2)	(3)	(4)	(5)	(6)
<b><i>Hypothesis C1. Mean Effects Index (all 21 outcomes)</i></b>	<b>0.000</b>	<b>0.082</b>	<b>0.052</b>	<b>0.113</b>		<b>224</b>
Any visits by party officials, APC	0.819	0.004	0.060	0.941	1	210
Number of visits by party officials, APC	1.857	0.427	0.383	0.266	1	210
Any political rallies, APC	0.248	0.045	0.055	0.412	1	207
Number of political rallies, APC	0.467	0.046	0.147	0.753	1	209
Any party officials distributed gifts? APC	0.481	0.080	0.063	0.206	1	205
Number of community members receiving gifts, APC	0.295	0.069	0.044	0.114	1	208
Number of posters displayed in community, APC	0.699	-0.022	0.042	0.601	1	207
Any visits by party officials, PMDC	0.368	0.008	0.069	0.912	1	133
Number of visits by party officials, PMDC	0.515	0.386	0.342	0.260	1	134
Any political rallies, PMDC	0.044	-0.028	0.022	0.198	1	134
Number of political rallies, PMDC	0.044	0.004	0.043	0.934	1	134
Any party officials distributed gifts? PMDC	0.045	-0.003	0.032	0.928	1	133
Number of community members receiving gifts, PMDC	0.025	-0.002	0.017	0.924	1	133
Number of posters displayed in community, PMDC	0.235	0.048	0.052	0.353	1	132
Any visits by party officials, SLPP	0.739	0.051	0.062	0.409	1	222
Number of visits by party officials, SLPP	1.679	0.066	0.230	0.773	1	224
Any political rallies, SLPP	0.159	0.011	0.044	0.809	1	213
Number of political rallies, SLPP	0.315	-0.079	0.104	0.448	1	219
Any party officials distributed gifts? SLPP	0.368	0.078	0.072	0.278	1	213
Number of community members receiving gifts, SLPP	0.226	0.038	0.040	0.339	1	214
Number of posters displayed in community, SLPP	0.555	0.047	0.035	0.187	1	221

Notes: i) significance levels +  $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$  based on two-sided tests; ii) robust standard errors clustered by polling center; iii) specifications include stratification bins for the polling center (number of registered voters and distance to next nearest) and constituency fixed effects; iv) mean effects index constructed following Kling, Liebman and Katz (2007) and expressed in standard deviation units; v) adjustments to control false discovery rate (FDR) computed following Benjamini, Krieger and Yekutieli (2006) and Anderson (2008); and vi) data source is the community level exit poll survey.

**Appendix Table A.6: Treatment Effect Estimates for Secondary Outcomes**

	Control mean (1)	Treatment effect (2)	Standard error (3)	Naïve p-value (4)	N (5)
<b>Panel A: Voter turnout</b>					
Individual turnout verified by voter ID card, group screening	0.984	-0.026	0.015	0.961	5,346
Polling center turnout, National Electoral Commission returns	0.833	-0.005	0.008	0.700	206
Mean effects index, individual debate treatment	0.000	0.072*	0.036	0.026	1,595
Mean effects index, individual get to know you treatment	0.000	0.110*	0.061	0.040	1,590
Mean effects index, individual radio report treatment	0.000	0.024	0.044	0.291	1,592
<b>Panel B: Other voter outcomes (group screening data)</b>					
Individual confidence that election was free and fair	0.919	-0.025	0.023	0.858	5,414
Individual frequency of discussing politics	0.243	0.031	0.027	0.124	5,245
Individual names MP candidate not in the debate	0.135	-0.019	0.032	0.718	1,622
Individual knows Presidential candidates' names (of 2)	1.360	0.097**	0.041	0.009	5,246
<b>Panel C: Electoral misconduct (community survey)</b>					
Police were present at the polling station on election day	0.798	-0.006	0.040	0.872	217
Some sign of inappropriate vote swaying by officials	0.176	-0.044	0.043	0.312	215
<b>Panel D: Elected MP self-reported outcomes</b>					
MP discussed GEB with colleagues	0.923	-0.172	0.146	0.874	27
MP raised an issue related to GEB in a committee meeting	0.615	0.041	0.183	0.412	27
MP raised his/her first priority issue in a committee meeting	1.000	-0.197	0.131	0.926	27
Consistent position on CFF allocation pre- to post-election	0.462	-0.167	0.224	0.767	26
Consistent position on GEB pre- to post-election	0.900	0.097	0.102	0.177	22
Consistent first priority issue pre- to post-election	0.308	0.175	0.200	0.196	27
Consistent position on CFF transparency pre- to post-election	0.923	0.012	0.106	0.456	26
Days MP claimed to have spent in home constituency	120.636	77.323+	50.177	0.071	23
Number of public meetings MP claims to have held	12.385	7.644*	4.110	0.038	27
Number of oversight visits clinic health staff report MP making	0.286	-0.124	0.136	0.812	28
Number of self-proclaimed accomplishments as MP	2.462	-0.551	0.398	0.910	27
Total amount of CFF claimed to have spent / 1st allotment	106.779	290.647	129.540	0.018	27
Amount of CFF claimed spent on development / 1st allotment	68.493	242.951	107.139	0.017	27

Notes: i) significance levels indicated by +  $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$ ; ii) p-values based on one-sided tests in Panels A, B and D, and two-sided tests in panel C; iii) all mean effects indices are expressed in standard deviation units; and iv) standard error and p-values in panel D are the maximum of conventional OLS and HC<sub>2</sub> corrected.

**Appendix Table A.7: Survey Priming and Reinforcing Effects**

**Panel A: Survey priming effects across individual treatment arms**

Mean effects index by hypothesis	Treatment effect beyond survey: Debates vs surveyed controls			Survey priming effect: Surveyed controls vs. "pure" controls		
	Treatment	Standard	Naïve	Treatment	Standard	Naïve
	effect	error	p-value	effect	error	p-value
	(1)	(2)	(3)	(4)	(5)	(6)
A1. Political knowledge	0.118**	0.023	0.000	0.026+	0.015	0.051
i. General knowledge	0.211**	0.042	0.000	0.099**	0.035	0.004
ii. Candidate characteristics	0.057**	0.023	0.008	-0.021	0.019	0.858
iii. Policy stances	0.125**	0.033	0.000	0.030	0.024	0.114
A2. Policy alignment	0.079**	0.032	0.010	0.012	0.038	0.372
A3. Vote for best	0.025	0.053	0.317	0.079+	0.053	0.070
A4. Cross party lines	-0.010	0.039	0.605	-0.045	0.046	0.834
A5. Openness	-0.003	0.025	0.546	0.006	0.028	0.411
Observations	933			935		

**Panel B: Survey reinforcing effects across group screening arms**

Mean effects index by hypothesis	"Pure" treatment effect: Debates without survey vs. controls			Survey reinforcing effect: Interaction of debates with survey		
	Treatment	Standard	Naïve	Interaction	Standard	Naïve
	effect	error	p-value	effect	error	p-value
	(1)	(2)	(3)	(4)	(5)	(6)
A1. Political knowledge	0.262**	0.031	0.000	0.028+	0.020	0.075
i. General knowledge	0.233**	0.055	0.000	0.099**	0.037	0.004
ii. Candidate characteristics	0.251**	0.036	0.000	0.011	0.024	0.328
iii. Policy stances	0.282**	0.039	0.000	0.010	0.022	0.321
A2. Policy alignment	0.105**	0.041	0.005	-0.001	0.030	0.510
A3. Vote for best	0.089*	0.047	0.029	-0.012	0.035	0.631
A4. Cross party lines	-0.056	0.037	0.931	0.053+	0.034	0.061
A5. Openness	0.064	0.050	0.103	0.042+	0.026	0.052
Observations	5,415			5,415		

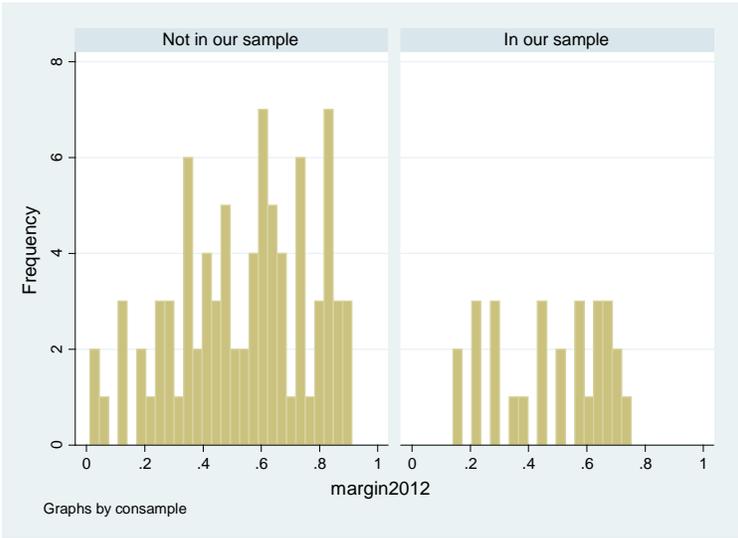
Notes: i) significance levels +  $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$  based on one-sided per comparison tests; ii) robust standard errors clustered by polling center; iii) specifications include stratification bins for the relevant randomization procedure and constituency fixed effects; iv) additional controls vary by dataset and hypothesis from the set (gender, age, years of schooling, polygamous marriage, farming occupation and radio ownership); v) mean effects index constructed following Kling, Liebman and Katz (2007) and expressed in standard deviation units; and vi) mean effects indices are standardized with respect to the pure control group for all of panel A.

**Appendix Table A.8: Treatment Effect Heterogeneity, Subgroup Analysis**

	A1. Political knowledge	A2. Policy alignment	A3. Votes for debate winner	A4. Votes across party lines	A5. Voter openness
	(1)	(2)	(3)	(4)	(5)
Female * Treatment	-0.076** (0.021)	0.037 (0.031)	-0.034 (0.039)	0.036 (0.040)	-0.003 (0.030)
Youth * Treatment	0.022 (0.020)	-0.033 (0.031)	0.070 (0.045)	-0.069+ (0.041)	0.011 (0.032)
No Krio * Treatment	-0.025 (0.042)	0.038 (0.061)	0.107+ (0.061)	-0.100+ (0.053)	-0.045 (0.058)
Treatment	0.313** (0.030)	0.095* (0.042)	0.050 (0.050)	0.015 (0.043)	0.096+ (0.050)
Female	-0.064** (0.017)	0.024 (0.027)	0.060+ (0.035)	-0.078* (0.037)	-0.027 (0.029)
Youth	-0.009 (0.014)	0.011 (0.022)	-0.027 (0.033)	0.030 (0.034)	0.002 (0.023)
No Krio	-0.098** (0.025)	-0.022 (0.037)	0.064+ (0.036)	-0.040 (0.040)	-0.004 (0.037)
Observations	5,246				

Notes: i) significance levels indicated by +  $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$  based on two-sided tests; ii) robust standard errors clustered by polling center; iii) all specifications include stratification bins for the polling center (number of registered voters and distance to next nearest) and constituency fixed effects; iv) specifications further include additional control variables years of schooling, polygamous marriage, farming occupation and radio ownership; v) treatment effects are on the hypothesis-level mean effects index constructed following Kling, Liebman and Katz (2007) and expressed in standard deviation units; vi) data source is the exit poll survey from the group screening sample; and vii) the PAP also specified the politically informed as a subgroup, but as our measure of this is potentially endogenous to treatment we omit it from this analysis.

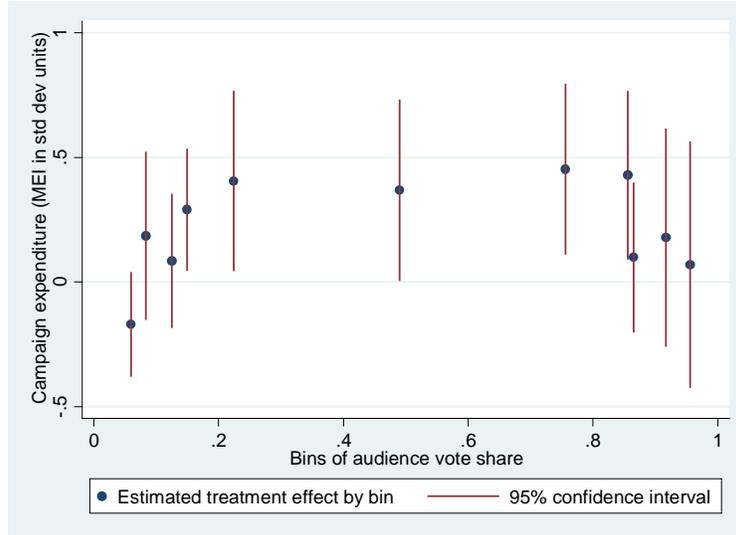
**Appendix Figure A.1: Distribution of 2012 Vote Margins across Sample Inclusion**



Notes: This figure plots the distribution of winning 2012 vote margins (1<sup>st</sup> versus 2<sup>nd</sup> place finisher) for Parliamentary constituencies outside (on the left) and within (on the right) the study sample.

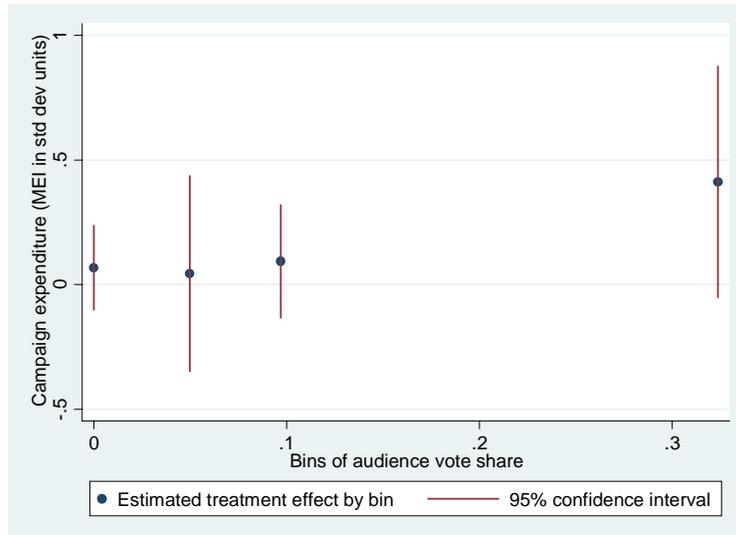
## Appendix Figure A.2: Heterogeneous Spending Response by Debate Performance

*Panel A: Campaign spending by audience support, major party candidates*



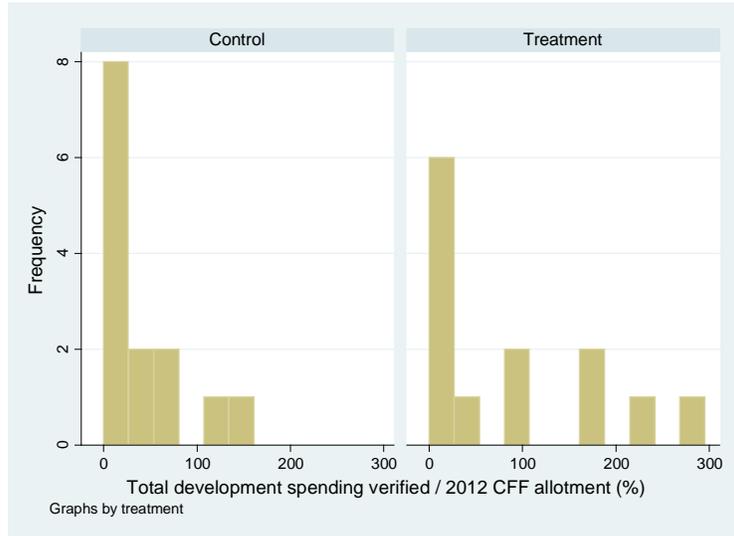
Notes: This figure explores whether candidate performance during the debate drives the intensity of their campaign spending response to the road show. The inverted U-shaped relationship between the expenditure response and audience assessment of who won the debate suggests that candidates responded most strongly when debate winner was closely contested. In this analysis: i) each dot represents the estimated coefficient on the interaction between treatment assignment and 11 equally sized bins of the share of audience members designating a given candidate as the debate winner; ii) the specification controls for the underlying ethnic-party loyalty of the constituency, randomization strata, and constituency fixed effects; iii) the reference bin on the left is the treatment effect estimated for the worst performing candidates, who received less than 8 percent of audience votes; and iv) the underlying unit of observation is the voter-candidate pair, for major parties only, N=10,488.

*Panel B: Campaign spending by audience support, third party candidates*



Notes: This figure applies the analysis in Panel A to third party candidates. The positive coefficient on the far right bin of audience support suggests that third party candidates responded to the road show most strongly when they had performed well during the debate. The unit of observation is the voter-candidate pair, for minor parties only, N=3,299.

**Appendix Figure A.3: Histogram of CFF Spending by Treatment Assignment**



Notes: This figure plots the distribution of total development expenditures that could be verified on the ground through detailed field visits to each MP's home constituency, scaled by the amount of the 2012 constituency facilitation fund (CFF) allotment, separately for control (on the left) and treated MPs (on the right). Comparing the two subplots shows that the positive treatment effect estimated in Table 5 is driven by differences in both tails: there is a higher frequency of low values among control MPs, as well as a larger number of high values among treated MPs. Values above one hundred percent reflect the fact that fieldwork occurred after the first 18 months in office (i.e. potentially capturing more than one annual CFF allotment) and that MPs are free to raise additional monies to supplement the CFF.