The Incentives to (Not) Debate in Low-Information Races

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Abstract

Why are there few debates in low-information elections where they have the greatest potential to inform vote choices? Consistent with weak incentives to reveal their quality or make policy commitments, we find only a quarter of Parliamentary candidates in Sierra Leone privately volunteer to debate. Publicizing their choices through guaranteed dissemination platforms allows voters to punish those who abstain and sharply increases participation. Randomly improving platform quality induces frontrunners to join. We document high voter willingness to pay to access debates and private sector interest in disseminating them, confirming that candidate reluctance and not market viability is the main barrier.

JEL codes: D72, O12

Despite origins dating back to ancient India and Greece, political debates are not a consistent feature of electoral campaigns. Even where a strong tradition exists, the frequency of debates has diminished in recent times: debates for United States Senate seats, for example, fell dramatically over the last two decades (Figure 1, panel A). Galliher (2022) laments this loss of a rich information source for voters, and warns of repercussions for democracy itself, given how debates can amplify the role of policy in campaigns, provide a level playing field for candidates of differing financial means, and help humanize rivals in divisive times. Their decline connects to wider concerns about the erosion of democratic norms, with norms arguably playing an important role in persuading candidates to debate.

While pundits confidently assert when and why particular candidates would gain or lose electorally from participating in debates (for a recent example, see commentary on whether Joe Biden and Donald Trump would or should debate in 2024 and subsequent fallout[1]), there is little empirical evidence or theoretical modeling on the topic. This paper aims to address that gap.

We focus on low-information races because, somewhat counterintuitively, debates are currently more common where they are less likely to have impact: in wealthier countries, where voters are better informed than in low-income countries (Figure 1, panel B); and in the highest, most salient offices (like President), where the public is already more familiar with candidates. This pattern is inversely proportional to existing evidence on impact. Using election data from ten high-income countries, Le Pennec and Pons (2023) show that while many people change their voting intentions during the campaign, these changes do not coincide with televised debates. In contrast, randomized controlled trials in low-income and limited-information races find that exposure to debates increases voter knowledge about candidates and changes how people vote (Bidwell et al 2020, Platas and Raffler 2021, Brierley et al 2020, Bowles and Larreguy 2024). Taking part in a debate as a candidate has been shown to exert accountability pressure over elected officials, which may be particularly impactful in weaker institutional environments.[2]

We parse two potential channels that could explain why there are few debates in low-information races: (i) weak political incentives for candidates to reveal information; and (ii) limited

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[1] From the Associated Press, February 2024, "Will Biden and Trump face one another in presidential debates? There's no commitment yet," https://apnews.com/article/trump-biden-presidential-debates-election-2024-c5348c172ff4136f490d4b2273b0d6d9.

[2] Bidwell et al (2020) establish accountability effects of debates on the public spending of elected officials in Sierra Leone. We are not aware of equivalent studies that causally measure accountability impacts of debates in high income countries, for either low- or high-information races.

market viability. Some candidates may not wish to encourage initiatives, like debates, that provide concrete information to voters about their quality and elicit promises on how to spend public resources if elected. On the other hand, if voters have little interest in politics, and low accompanying willingness to pay for political information, there may not be a viable market for debate production and dissemination. We explore each channel empirically and then sketch a simple model to capture the observed constellation of results. We do so via a series of elicitation exercises and experiments in the context of the 2018 races for Members of Parliament (MPs) in Sierra Leone.

Sierra Leone in 2018 had free entry into politics, free speech and media, and competitive elections;[3] alongside low voter knowledge about politicians. In 2012, a small-scale, high-intensity field experiment in which MP debates were publicly screened proved highly effective in increasing voter knowledge, moving vote choices towards better performing candidates, and enhancing accountability pressure on elected MPs (Bidwell et al 2020). Despite the success and high profile of the pilot, accompanied by statements from the electoral commission advocating for mandatory debates, no plans were in place to scale up debates as the next election drew near. This presented an opportunity to work with a respected civil society partner to assess the conditions needed to facilitate MP debates at scale.

To explore political incentives, we privately (unobserved by voters) elicit willingness to participate in debates among candidates in 72 races. Only 26 percent of candidates volunteered their constituency to host a debate. In most races (76 percent) there is one candidate who wants to debate, and in all races, there is at least one candidate who does not, suggesting broad consensus about who will benefit from debating. We find greater interest from those in tight races and from less established parties. When interested candidates are asked to coordinate with others on a time and place for a debate, few succeed in convincing their rivals to join them. Relying on candidates to self-organize debates thus results in one occurring in, at best, a third of races.

Candidates' willingness to debate is highly responsive to making their participation decisions public, which we gauge by introducing a guaranteed dissemination platform. We secured airtime for live radio debates that would go to broadcast if at least one candidate showed

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[3] New third parties won MP seats in the 2012 and 2018 elections, and the Presidency peacefully transitioned between the two major parties twice since the end of the civil war in 2002. More recently, some democratic backsliding has become apparent.

up. Voters now observe who abstains from debates and can draw inferences about their relative quality. The radio platform increases the prevalence of debates to between 70 and 100 percent of races, depending on the estimating sample. This shows how a relatively simple institutional change can flip the incentives in favor of debate participation.

We next show that platform quality matters by randomizing whether constituencies received a radio debate or a higher quality video debate moderated by a well-known independent facilitator. While radio debates attracted 2.5 candidates on average, video debates attracted 3.9, with the increase concentrated amongst frontrunners. These results suggest that modest investments in the production capabilities of independent organizers can further increase debate prevalence.

Even in advanced democracies with abundant resources, debates are rare in less salient elections with smaller media markets (such as Chicago Alderperson). Limited voter interest, fixed production costs, and the need to disseminate through bespoke or less-watched media channels could undermine the market viability of debates in sub-national races.[4] For low-income countries, poverty exacerbates this challenge by limiting the amount voters can pay for debates and complicates the dissemination of audio-visual content given low television or smart phone ownership.

To assess market viability, we first measure voter willingness to pay (WTP) to access debates. Field teams distributed vouchers for free admission to debate screenings at varying travel distances. Averaged over a range of zero to 15 miles, voucher take-up is 30 percent, with travel costing roughly US$0.50 per mile. Compared to the minimum daily wage of US$2.10, these estimates suggest a healthy demand for political information.

Given the high observed WTP, we next partner with local for-profit cinema halls and find that debate dissemination is compatible with their business model. Supplying a cinema with a free debate DVD leads to, on average, 2.2 showings that reach 228 paying audience members per hall. The private sector can thus amplify the reach of political debates at near zero marginal cost. Taken together, these results point to a potential market for some form of debates, although the high

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[4] This stands in contrast to national contests, where for example Nielsen data suggests that 73.1 million viewers tuned in across 16 existing television channels to view the first Biden-Trump Presidential debate in 2020. Source: https://www.cnn.com/2020/09/30/media/first-presidential-debate-tv-ratings/index.html

production costs of video debates (as opposed to radio) might be harder to recoup in low-income environments.

To guide the interpretation of the empirical estimates, we sketch a model focused on how institutional features governing debates shape politicians' participation decisions. If debates provide an accurate, costless mechanism to reveal quality, all participants opt in. This follows the standard logic of unraveling (Viscusi 1978) and explains why allowing voters to observe participation choices, and hence draw inferences about the quality of those who abstain, induces candidate entry. Adding sufficiently high costs of debating (e.g., increased accountability for the winner), or concealing participation choices, prevents unraveling and leads candidates to abstain. Under additional assumptions, we show that adding sufficiently high noise to the debate signal deters participation, which explains why candidates are less willing to join the lower quality radio platform.

Our focus on information provision builds on evidence that (at least some) voters in low- and middle-income countries will change their vote in response, be it from audits (Ferraz and Finan 2008), report cards (Banerjee et al 2011), or other sources (Pande 2011). Debates have a stronger track record than some other types of voter information campaigns (Dunning et al 2019), convey a range of information from policy to charisma, and have proved effective in this context (Bidwell et al 2020). Our finding that candidates are sensitive to noise in the debate signal, and particularly so for frontrunners, resonates with evidence from Liberia (Bowles and Larreguy 2024). Testing the price sensitivity of voter take-up of debates to small changes in travel costs relates to a large literature in health (Dupas 2014, Kremer and Miguel 2007).

Our study relates to a theoretical literature examining when political systems move to a more accountable equilibrium (Myerson 2006, Bidner and Francois 2013, Persson and Tabellini 2009). While this literature finds, as we do, that politicians sometimes have an incentive to make themselves more accountable (e.g., hold an election), the game is often played between an autocrat and populace where the main motivator is the risk of being overthrown. In our case, the accountability-enhancing action is more intermediate (debating), and the game is among candidates competing for votes (as in Svolik 2013 and Bowles and Larreguy 2024).

Relevant to policy, we demonstrate the promise of low-cost public dissemination platforms in fostering debates even where political incentives to reveal information are weak.

1. Institutional Context

Sierra Leone is a low-information, low-accountability environment. Exit poll data from 2018 shows that only 4% of voters could name three responsibilities of MPs, and fewer than 20 percent knew how much public money is allocated via the constituency facilitation fund (CFF), an annual allotment to each MP to cover their transport to, and development projects in, their constituency. Field audits in 2014 reveal weak accountability over this money: only about a third of CFF expenditures could be traced to development projects in the status quo (Bidwell et al 2020).

Parliamentary races are first-past-the-post elections and winners represent the local constituency in the national legislature. There are two main parties, the All People's Congress (APC) and the Sierra Leone People's Party (SLPP), both established shortly after Independence. Recently new parties have entered and won a small number of Parliamentary seats, most prominently the People's Movement for Democratic Change (PMDC) in 2012, and the National Grand Coalition (NGC) and Coalition for Change (C4C) in 2018. Turn out is consistently high (87 percent in 2018).

This research builds on a high-profile pilot implemented by the NGO Search for Common Ground, known locally as Talking Drum Studios (TDS), a respected, impartial voice on politics in Sierra Leone. In 2012, TDS hosted, moderated, and videotaped debates between MP candidates in 14 races. Debates covered candidate qualifications, policy stances, and commitments about how they would spend the CFF. To evaluate their efficacy, the debate videos were screened in large public gatherings in 112 of 224 randomly selected communities. Estimates suggest that voters in screening communities increased their knowledge of politician characteristics and policies and were 3.5 to 5 percentage points more likely to vote for the debate winner (Bidwell et al 2020). MPs elected from the constituencies randomly selected to participate in debates subsequently spent more CFF money on development projects, as verified by field audits, than their peers from constituencies without debates. Similar impacts of debates on voters have been found in Uganda (Platas and Raffler 2021), Ghana (Brierley et al 2020) and Liberia (Bowles and Larreguy 2024).

Given the success of the pilot and informal commitments from the electoral commission to promote debates, we seek to understand why, as the next election approached, were no plans in place to scale them up?

2. Political Incentives to Debate

We investigate the willingness of candidates to participate in debates, elicited via private phone calls, over increasingly costly stages. Measuring response rates and the fall off as ordeal costs rise tells us about candidate willingness to debate when their choices are not observed by voters. We quantify how their behavior changes with the introduction of public dissemination platforms.

2.1. Private Elicitation

Early in 2018, the research team established a call center to contact all registered candidates in 72 of the 132 MP races nationwide. Call center workers explained that TDS hosted 14 MP debates in the previous election, and that these debates effectively informed voters about candidates' policy positions and qualifications. They explained TDS had resources to produce more debates for the upcoming election and was looking for constituencies to host them. Interested candidates were told to call TDS to request a debate in their constituency. Call center workers noted that resources were limited, so a lottery would ultimately determine which constituencies were selected.[5] They followed up with text message reminders (see elicitation script, Appendix A).

This set-up makes politician behavior private: voters cannot tell if a debate fails to go forward because candidates are uninterested or because of the lottery. Nor would voters know which candidate volunteered the constituency to be part of the program. Candidate response rates are thus informative of their baseline willingness to debate in the absence of any reputational cost for abstention. The requested call back to TDS imposes a modest but real time cost (plus airtime), an intentional design choice to avoid cheap talk.

Of the 430 total registered candidates, 326 had working phone numbers and 95 percent of those agreed to speak with the call center worker (Figure 2). Among those contacted, 85 candidates called the TDS number to express interest in having a debate in their constituency (26 percent). These 85 candidates are reasonably evenly spread across 55 constituencies: 76 percent of the targeted races had at least one candidate interested in debating, and in all constituencies, at least one was not. This is compatible with most candidates having a common view about who would benefit from a debate.

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[5] In total, TDS had funding to produce 45 debates nationwide, 15 of which were randomly selected from the elicitation sample (see research design, Appendix Table A1).

Among candidates from minor parties, 31 percent called back to express interest, an increase of 12 percentage points compared to major party candidates (significant at 95 percent confidence), but still well below half (Appendix Table A1). Similarly, frontrunners (i.e., those representing the dominant party in its stronghold) are somewhat less likely to express interest than others. Interest from minor parties suggests value to debating even when the chances of winning the election are low, perhaps for career progression within the party. This resonates with the 2012 pilot, where minor party candidates responded most strongly to debate dissemination by reallocating campaign effort towards the newly informed communities (Bidwell et al 2020). In Liberia, marginal candidates were also (at baseline) more likely to opt into an initiative that broadcast their policy promises to voters (Bowles and Larreguy 2024).

Call back rates are higher in swing seats (33 percent), than in party strongholds (24 percent), but the difference is not statistically significant.[6] This is intuitive if tighter races mean a strong debate performance could tip the odds of winning the race in one's favor. Contrary to popular wisdom, there are no systematic differences in call back rates for incumbents, although there are few in the sample.

2.2 Coordination with Rivals

When interested candidates made the first call back to TDS, they were asked to contact other candidates in their race and agree on a time and place for a debate, and then call TDS a second time to convey the agreed upon details. This step mirrors the status quo in many low-information races, where candidates must do the coordination work if they want a debate to happen, with little support from external organizers.

In total, 31 candidates running in 24 distinct races cleared the second hurdle by calling back to report coordination with at least one fellow candidate (Figure 2). Thus, requiring candidates to coordinate (not just express interest) reduces the number of candidates interested in debating from 85 to 31 (a 64% decrease) and number of races in play from 55 to 24.

This falloff reflects two channels. The more prevalent is persuasion failure: only one candidate made the first call and could not convince rivals to participate. This occurred in 27 (87

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[6] We estimate electoral competitiveness using census data on ethnic composition of the jurisdiction and historical ties between ethnic groups and the two major parties (see Casey 2015). As constituency boundaries were redrawn shortly before this election, we classify swing seats at the next higher level of aggregation (the district).

percent) of the 31 races lost between stages. In the remaining four, multiple candidates initially expressed interest but could not come together on logistics, i.e., there was a coordination failure.

When the elicitation closes, only 9.5 percent of the initial sample of contacted candidates, and only 33 percent of targeted races, are in play to host a debate in their constituency. Since relying on candidates to self-organize yields, at best, a debate in only a third of races, we next consider external coordination in the form of guaranteed public dissemination platforms.

2.3 Radio Dissemination Platform

Wealthier countries typically establish an independent commission to sponsor and produce debates, which are then broadly disseminated by public and private media outlets. In the U.S. for example, the nonpartisan Commission on Presidential Debates (CPD) was established in response to the patchy participation of leading candidates in the 1970's and 80's, when debates "were hastily arranged after negotiations between the candidates that left many uncertain whether there would be any debates at all."[7] A key feature of these platforms is that voters observe who accepts or declines the invitation to participate, and can update their expectations about candidate quality accordingly.

Such independent commissions are often nascent or nonexistent in low-income countries or for low-information races in high-income countries. We therefore adapt a low-cost version amenable to smaller-scale media players. In Sierra Leone, a natural choice is local radio stations, which are typically independent and whose geographic coverage maps reasonably well to constituency boundaries.[8] This study paid for one hour's airtime (US$200) for a live on-air debate, subject to at least one candidate showing up. We gave radio station managers candidates' contact details and TDS's moderation guide from the video debates.

Roughly half of the 72 elicitation constituencies had local radio coverage, and we selected twenty to test the platform. (Candidate responses under private elicitation are comparable for this subsample, Appendix Figure A2). Through calls to station managers and audio recordings, we

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[7] After the first televised debates between Kennedy and Nixon in 1960, there were no such debates in the 1964, 1968 or 1972 Presidential contests. The 1976, 1980 and 1984 debates were those described above as "hastily arranged." The CDP was founded after the 1984 experience, which "reinforced a mounting concern that, in any given election, voters could be deprived of the opportunity to observe a debate among the leading candidates for President." Source: https://www.debates.org/about-cpd/overview/

[8] While stations often cover more than one constituency (on average they cover 5.3), they do not cover so many that they would not have audience incentives to broadcast any particular MP debate within their coverage area.

collected data on whether a debate was broadcast, and if so, how many candidates participated. Qualitative review of the recordings suggests radio debates broadly followed the moderation guide, in terms of the questions posed, time allocated to candidates to answer questions, and civility of discourse.

Introducing the radio platform led to debates involving two or more candidates in 14 constituencies (70 percent of the platform sample). If we expand inclusion to broadcasts with only one candidate, prevalence reaches 18 constituencies (90 percent). In 4 constituencies (20 percent) both major party candidates participated. Overall, the radio platform boosted the frequency of multi-candidate debates from the 33 percent observed when candidates self-organize to 70 percent. This suggests making the decision about whether to debate observable to voters is critical.

2.4 Experimental Variation in Platform Quality

We embed a small-scale experiment to better understand how candidates respond to public platforms of differing quality. Within the 72 private elicitation races, 30 constituencies had an equal chance of being randomly assigned to the radio platform, TDS video debates (allocated via lottery), and a control condition with no debate (Appendix Figure A1).

While both the radio and TDS video debates are organized by an external group and reveal participation choices to voters, the latter are higher quality. TDS uses professional moderators who are well-known and trusted as independent. Compared to audio-only, video conveys more information that voters care about. For example, Bidwell et al (2020) find that voters respond more to watching a video debate than to an audio summary of the facts covered; and Casey (2022) finds that photographs provide voters with some information about whether pictured candidates are corrupt.

Regression analysis estimates:

$$Y_c = \beta_0 + \beta_1 T\_radio_c + \beta_2 T\_film_c + X_c + \varepsilon_c \qquad (1)$$

where Y is the number of candidates who debate in constituency c; T_radio_c equals one if the constituency was assigned to the guaranteed radio platform; T_film_c equals one if the constituency

was assigned to the TDS video debate; the omitted group is the control condition; vector X includes the number of candidates per race and treatment assignment strata; and ε is an idiosyncratic error.[9]

Call back rates to the initial private elicitation are balanced across the three randomized groups (Table 1, column 1). No debates were subsequently held (on radio or otherwise) in the control constituencies (column 2). This reinforces the weak self-organizing response observed under the status quo. By contrast, debates were held in all constituencies assigned to the two platforms. Significantly more candidates were induced to participate in the TDS video compared to radio debates (3.9 versus 2.5 on average, with p-value on difference = 0.028 in column 3). This video advantage holds for attracting both major party candidates (column 4) and the frontrunner from the locally dominant party, who was heavily favored to win the general election (column 5). This resonates with estimates from Liberia, where Bowles and Larreguy (2024) show that having a respected journalist reassure candidates about the impartiality and quality of the proceedings increases debate participation of leading candidates.

This pattern of participation increasing in the quality of the debate signal qualitatively holds more broadly. Stepping beyond the experimental frame, Appendix Table A2 compares take up rates across all 20 radio platform races, the full set of 45 TDS video races (15 of which were selected from the elicitation sample), and the 14 races from the 2012 pilot, which were the most intensely promoted and carefully controlled. The probability of a candidate accepting the invitation to debate increases from 45 percent in radio platform, to 59 percent in TDS videos, to 91 percent in the pilot.

Summarizing the evidence on political incentives, few candidates could or would overcome coordination costs to schedule and participate in a debate without external support, suggesting low willingness to supply (WTS) information in isolation. Making the choice observable to voters by guaranteeing a radio dissemination platform induced candidates to participate, indicating a high responsiveness of WTS to a low-cost public intervention. The higher quality video platform was even more successful, although at greater cost (around US$6,000 per video versus US$200 for radio). Thus, while the supply-side prevents a real challenge for organically scaling debates, independent media offers a low-cost route to broad participation.

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[9] Assignment strata account for potential overlap with a separate experiment that preceded this one, analyzed in Casey, Kamara and Meriggi (2021). Following Angrist and Pischke (2009) for small samples, we estimated both robust and bias-corrected HC2 standard errors (MacKinnon and White 1985), which proved very similar.

3. Market Viability of Debates

Given the observed success of the guaranteed platform, why were radio stations not already producing this content themselves? While US$200 is a cheap intervention from an international donor perspective, it is roughly one hundred times the daily wage in Sierra Leone, making it unclear whether such an investment could be recouped from advertising sales or listener subscriptions.[10] If the costs of providing information to poor, rural voters in low-income countries outweigh the benefits, private media on politics may not emerge. We assess whether limited market viability can explain the persistently low levels of political information, by measuring voter WTP to access debates and whether dissemination is compatible with the profit motive of existing media distributors.

3.1 Voter WTP

Ultimately 44 constituencies nationwide held TDS video debates, and TDS shared a DVD of each with the research team.[11] We commissioned local cinema halls in 41 of these constituencies to screen the relevant debate DVD on a specific date. Cinema halls are modest for-profit operations where community members pay admission to watch TV broadcasts, like Premier League matches, or recorded content, like movies. Voter WTP is measured by their effort in walking, or paying transport costs, to access these screenings from varying distances.

Specifically, we paid each cinema hall a flat sum of 140,000 SLL (US$16.80) to screen the filmed debate once, which covers the standard admission price of roughly 70 viewers. Field enumerators distributed a commensurate number of free admission vouchers to randomly selected households at increasing travel distances: 20 to households immediately around the cinema; 20 to households in a "nearby" community (US$0.50 in travel cost by motorcycle); and 20 to households in a "far away" community (US$1.00 in travel costs). Where feasible, enumerators visited a fourth not too distant pre-selected community (in 31 constituencies). Vouchers were laminated with unique codes and locations were tagged via GPS. An enumerator stationed at the hall for the designated screening collected any redeemed vouchers. In total, 3,124 vouchers were distributed

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[10] The official minimum wage in 2018 was 500,000 Sierra Leonean Leones (SLL) per month, or roughly US$2 per day at contemporaneous exchange rates.

[11] These constituencies form half of an experimental sample used to estimate the effects of debates at scale, which is analyzed in related work. No debate occurred in one of the 45 treatment group constituencies due to lack of cooperation from the political parties. Fifteen of the 45 were selected from the private elicitation sample (Appendix Figure A1).

in 156 communities, and we measure the share of vouchers redeemed by distance from household to hall.

All 41 cinema halls held the first subsidized screening as agreed (Table 2). On average, 22 voters redeemed vouchers per screening, and halls admitted another 37 non-subsidized attendees (roughly half of the halls charged full price for this group, while the rest admitted them for free). Combining the up-front subsidy with ticket sales to unsolicited attendees, each cinema earned US$21.20 from the screening. Across all halls, this exercise exposed 2,358 voters to a debate.

Redemption rates in communities immediately surrounding the cinema halls reached above 60 percent (Figure 3). Redemption drops off steeply as travel becomes necessary to reach the hall but then holds fairly steady, at between 30 and 20 percent from 2 to 8 miles. Figure 3 omits a small number of distribution sites between 9 and 15 miles out, all of which had zero redemption. Average redemption over the full range of zero to 15 miles is 30 percent, showing strong voter WTP to access political debates. Vouchers cost US$0.74 per exposed voter.[12]

3.2 Private Sector Debate Dissemination

To further test the viability of private sector dissemination, we unobtrusively monitored whether the halls in the voter WTP exercise screened the debate DVD again and charged admission after the enumeration team left. There was no suggestion, request, or compensation to the halls for showing the video again. Before leaving the area, an enumerator recruited a local community member to check the daily schedule of offerings at the hall for the next five days and note whether a Parliamentary debate was listed. If so, they were asked to take a photo of the listing, perform a headcount of attendees and record ticket prices, all of which they transmitted to the research team via WhatsApp.

On average, the cinema halls showed the debate an additional 2.2 times after the initial subsidized screening (Table 3, column 2) with 228 viewers paying US$0.24 each. This generated US$54.81 in revenue per hall and cumulatively exposed 9,363 voters to the debates.

In sum, we find evidence of market viability for debates. Voters are willing to endure nontrivial ordeal costs to view the debates in cinema halls. Revealed preference suggests further

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[12] The cost calculation divides the upfront subsidy of US$16.80 paid to the cinema hall by the total number of targeted voters per hall (which on average is 20 vouchers distributed in each of 3.7 communities, or 74), discounted by the take up rate (0.30), which is: US$16.80/74 x 1/0.30 = US$0.74.

dissemination via these halls is compatible with their profit motive. The high absolute number of voters attending, including residents of outlying communities, combined with low marginal costs makes this dissemination mechanism promising. As to production, the potential audience for information on sub-national races like a Parliamentary debate is capped by the constituency population (roughly 40,000), making it hard to recoup the full cost of debate video production. However, international donors spend substantial sums supporting elections. Modest investment to produce informative content could leverage the private sector for effective dissemination.

4. Conceptual Framework

We sketch a simple model to help guide interpretation of our empirical results. A key difference from the model in Bowles and Larreguy (2024) is that voters draw inferences about quality from candidates' decisions to abstain from debating.

Setup: We assume a Bayesian game is played by N candidates and a continuum of voters. First, each candidate i draws a quality variable Q_i which is known to all candidates but not to voters. The distributions that Q_i's are drawn from are independent, continuous, known to voters, and supported on the entire real line. Second, candidates decide whether to debate. If they do, voters receive a signal $Q_i^* = Q_i + \varepsilon_i$ where ε_i is a stochastic noise term. Initially we assume zero noise, but later relax this.

Third, voters vote for their preferred candidate. Voters have idiosyncratic preferences for candidate i modelled as a random variable μ_i. This captures the probability that a voter chosen at random has a given preference: e.g., $P[\mu_1 > \mu_2] = 0.2$, indicates 20 percent of voters have an idiosyncratic preference for candidate 1 over candidate 2. We assume the distribution of μ_i is common knowledge and use μ_{iv} to refer to a draw for voter v. Voters receive utility $\mu_{iv} + Q_i$ if they vote for candidate i (which rules out strategic voting). Since quality may not be revealed for all candidates, voters maximize their expected utility, $\mu_{iv} + \mathrm{E}[Q_i|H^d]$, where H^d is the voters' information set after a debate occurs in which the set d of candidates participated.

After the election, candidates receive utility $\alpha V_i + \beta W_i - C D_i$ where V_i is the candidate's vote share, W_i is an indicator for winning the election, and D_i is an indicator for whether the candidate chose to debate. We assume α, β, and C are all nonnegative. We analyze Perfect Bayesian Equilibria and derive the following results (proofs are in Appendix D).

Result 1. The probability $P\left(Q_j + \mu_j \geq \max_{i \neq j} Q_i + \mu_i\right)$ representing the vote share of candidate j when all Q_i's are known, is continuously and monotonically increasing in Q_j.

This means that the probability of a candidate winning is increasing in quality if both voters and candidates know the quality of all candidates.

Result 2. If the cost to debate C is zero and debates are noiseless, then there exists at least one equilibrium, and in any equilibrium all candidates choose to debate.

This follows the standard logic of unraveling: high-quality candidates opt into a debate, voters update their beliefs about those who abstain as having below-average quality, which in turn draws in candidates of middling quality, voters update again, and so forth. Unraveling explains why introducing a public debate platform has such a large impact on participation.

Result 3. Suppose $C = 0$ and debates are noiseless. Consider a modified game in which a debate only occurs if all candidates participate, and if any abstain, voters do not observe which candidate(s) chose to abstain, merely that a debate did not occur. In this game, in any equilibrium the probability of a debate occurring is zero.

The unobservability of participation decisions can explain the infrequency of debates observed in the status quo when candidates must self-organize.

Result 4. For cost greater than some $\bar{C}$ candidates will not debate.

A cost that outweighs the highest possible payout straightforwardly stops the unraveling and blocks debates from occurring.

To capture candidates' observed sensitivity to platform quality, we need to lower the cost and increase the noise, which substantially complicates the model. To simplify, we add restrictions and show that under certain conditions, increasing noise can cause candidates to drop out of debating.

Result 5. Suppose there are only two candidates. For sufficiently small (but positive) costs, there exist distributions of $\mu, \varepsilon,$ and Q such that:

  i.   _When debates are noiseless, any equilibrium must have a debate occur with positive probability._
  ii. _Beyond a sufficient threshold of noise, equilibria exist in which both candidates always abstain._

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Intuitively, with high enough noise debates reveal so little information that even high-quality candidates will not pay a small cost to debate. Thus, the quality of debate, and the trust voters have that debates reveal quality with minimal noise, matters for participation.

5. Conclusion

This paper explores the puzzle of why there are few debates between rivals for political office in low-information races, precisely where they can do the most to improve voter knowledge and politician accountability. It does so after a popular, high-profile pilot of Parliamentary debates in Sierra Leone failed to scale organically from one election to the next.

Elicitation exercises in the 2018 MP elections established that a key constraint is politician reluctance to debate. While some candidates expect to gain an electoral advantage from informing voters about their quality, an advantage large enough to offset the cost of having to make policy commitments, we find that most candidates prefer to block debates from occurring. The fact that 75 percent of races have one candidate who wants to debate and every race at least one candidate who does not, suggests candidates know their relative quality.

Introducing a public dissemination platform, which goes forward so long as one candidate shows up, is a cheap and impactful solution: it increases debate prevalence from 33 to upwards of 70 percent of races, for as little as US$200 per race. A simple theoretical model explains this result. By making politician participation decisions observable to voters, a guaranteed platform allows voters to update their beliefs about candidate quality based on debate decisions and leads to an unraveling result where (in the absence of costs and noise) all candidates debate. The model also shows that, under certain assumptions, candidate participation is sensitive to how noisy the signal of quality is that the debate generates. This matches our finding that high-quality video debates on average induce the participation of one additional candidate per race (compared to lower quality radio debates).

Despite widespread poverty and limited education, we find voters are willing to pay substantial effort or travel costs to access debates and that disseminating debates is compatible with the business model of small-scale cinema halls. This suggests an important role for the private sector in disseminating political information that has both public good and entertainment value.

The interventions assessed are effective, low cost and easy to scale, offering guidance about the institutional arrangements that facilitate the flow of political information as well as places to locate subsidies to amplify information's reach.

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Figure 1: Measures of Debate Prevalence over Time and Space

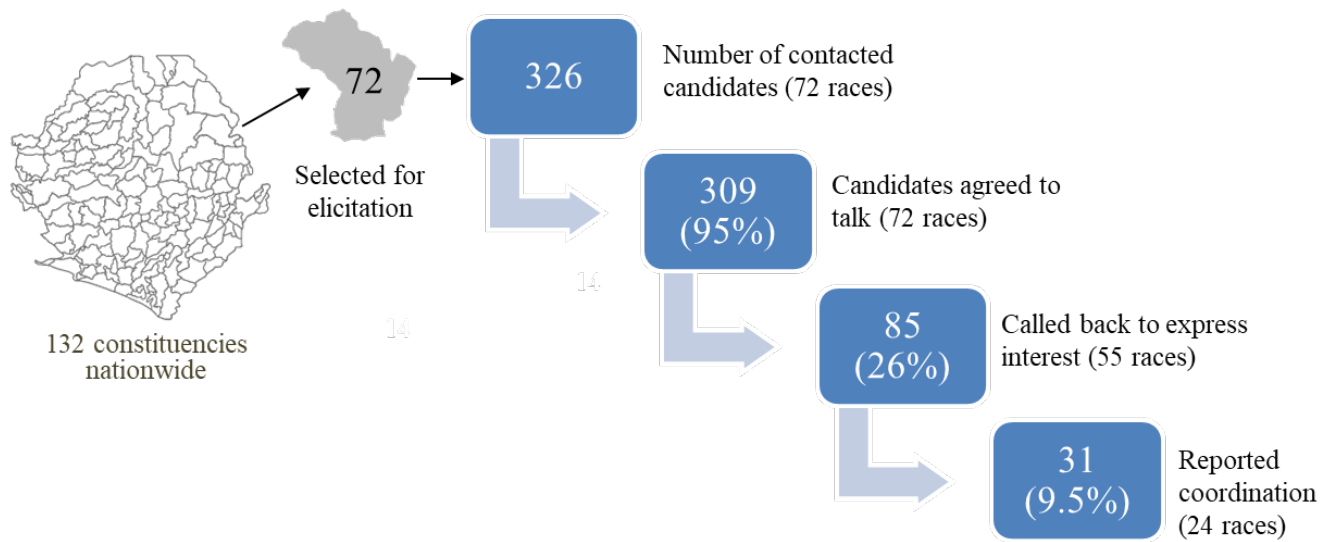Panel A: Recent Decline in the Mean Number of Debates per Senate Race in the U.S.
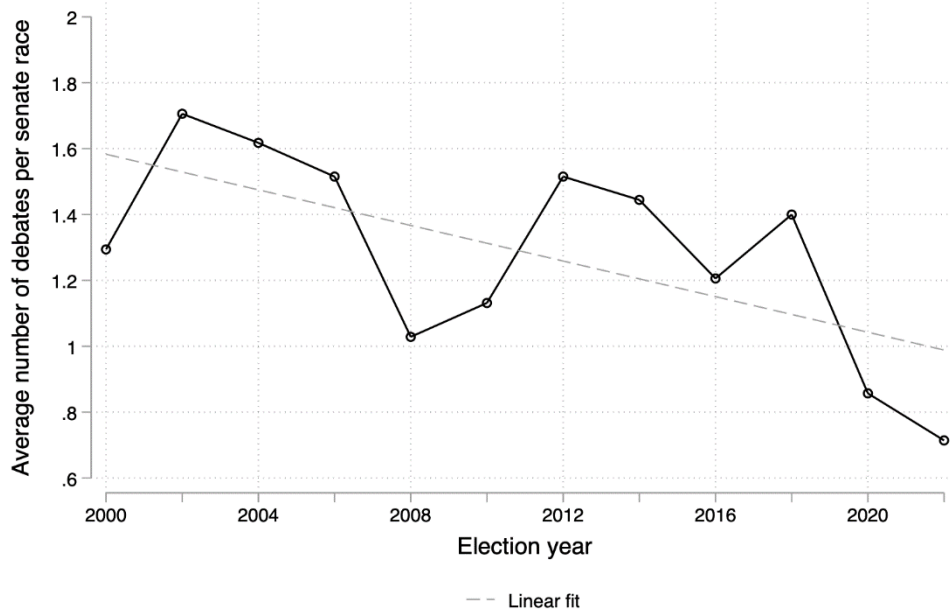
Panel B: Mean Number of Executive Debates Is Increasing in National Income
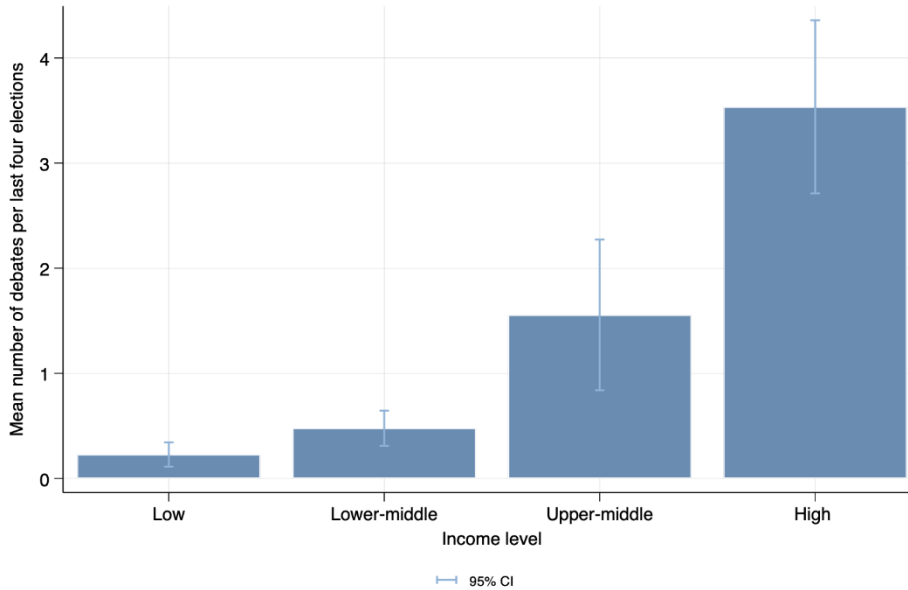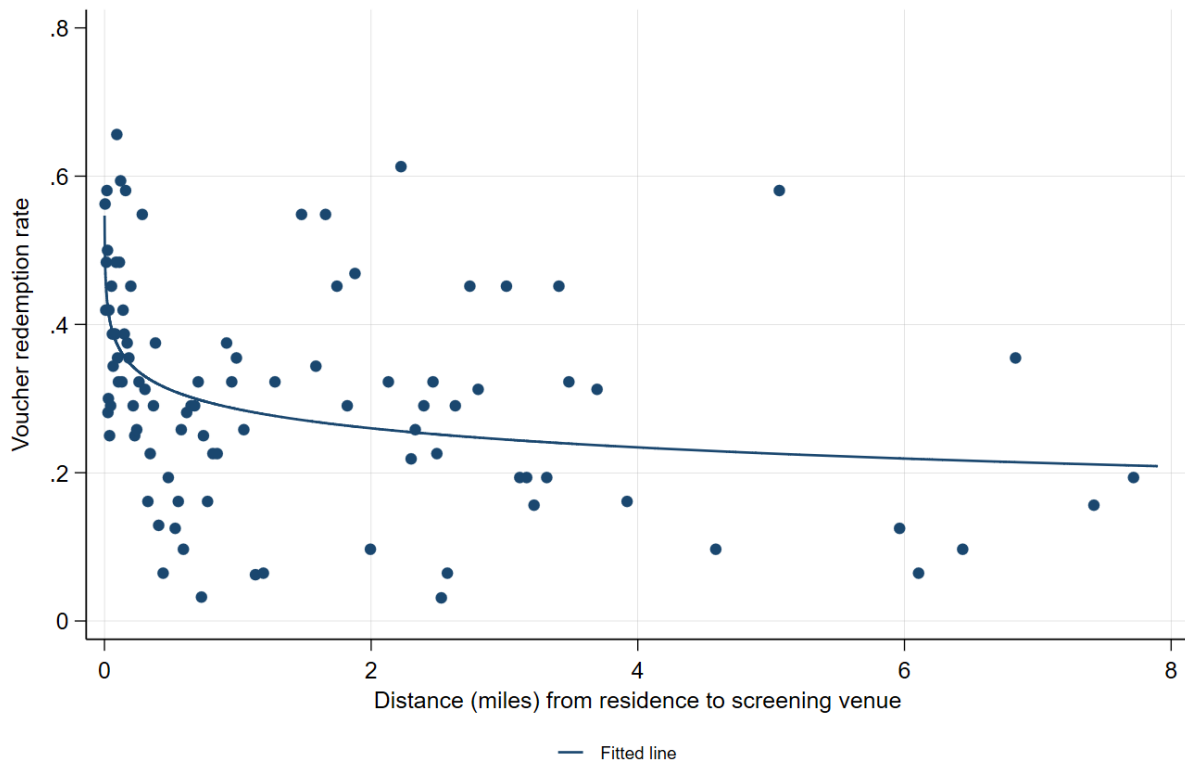

Notes: Panel A shows the number of debates held between candidates for US Senate, using data collected from videos and news articles mentioning debates in a particular senate race (93% of data comes from C-SPAN). Panel B shows the mean number of debates countries of different income groups (World Bank 2021 classifications) have had over their last four (most recent) presidential (or equivalent) elections using data collected by web search.

Figure 2: Private Elicitation of Candidate Willingness to Debate

72 — Selected for elicitation

132 constituencies nationwide

326 — Number of contacted candidates (72 races)

309 (95%) — Candidates agreed to talk (72 races)

85 (26%) — Called back to express interest (55 races)

31 (9.5%) — Reported coordination (24 races)

Figure 3: Voter Willingness to Pay to Access Debates

Notes: This figure shows how the proportion of free admission vouchers that were redeemed at cinema halls relates to the distance from the cinema hall to the communities where the vouchers were distributed. The data is divided into 100-quantiles of distance (in miles) from household to hall. A dot represents the mean redemption rate for the average distance of a particular quantile. The graph excludes the 3 furthest away quantiles.

Table 1: Experimental Estimates of Candidate Responses to Public Dissemination Platforms

	Number candidate call backs	Debate occurred	Number of candidates	Both majors participated	Frontrunner plus participated
	(1)	(2)	(3)	(4)	(5)
Radio platform	0.248	1.000***	2.457***	0.247	0.206
	(0.640)	(0.000)	(0.494)	(0.170)	(0.173)
TDS video platform	0.363	1.000***	3.861***	0.442**	0.566***
	(0.722)	(0.000)	(0.462)	(0.187)	(0.188)
Control mean	1.222	0.000	0.000	0.000	0.000
($\Delta = \beta\_video - \beta\_radio$)	0.115	0.000	1.404	0.195	0.360
p-value ($\Delta = 0$)	0.886	0.009	0.028	0.355	0.082
Observations (races)	30	30	30	30	30

Note: This table presents candidate responses to guaranteed public dissemination platforms, via radio or higher quality video, compared to the status quo (control group). In this analysis: i) significance levels indicated by *p < 0.10, **p < 0.05, and ***p < 0.01 based on bias-corrected HC2 standard error estimators (MacKinnon and White 1985), noting that robust standard errors are very similar (Angrist and Pischke 2009); ii) all specifications include the number of candidates in the race and treatment assignment strata; iii) rows 4 and 5 present a post-estimation test for the difference in coefficients from rows 1 and 2 with associated p-value rejecting equivalence; and iv) the outcome is number of candidates who made the first call back under private elicitation in column 1, whether or not a debate occurred in column 2, number of candidates who participated in the debate (coded to zero if no debate) in column 3, an indicator for whether candidates from both major parties (APC and SLPP) participated in the debate in column 4, and whether the candidate representing the major party in its respective stronghold plus at least one other candidate participated in the debate in column 5.

Table 2: Private Sector Debate Dissemination

	Subsidized screening (1)	Unsubsidized screening (2)
Average number of screenings per hall	1	2.2
Average ticket price	$0.12	$0.24
Average number of subsidized attendees	21.75	--
Average number of unsubsidized attendees	37.2	228.4
Average revenue per hall	$21.20	$54.81
Total subsidized voters exposed	870	--
Total unsubsidized voters exposed	1,488	9,363
Number of screenings	41	90
Number of cinema halls	41	41

Note: This table presents outcomes relating to the viability of private sector dissemination of recorded debates to voters via cinema halls. In this analysis: i) column 1 presents outcomes relating to the first subsidized screening, in which 41 cinema halls were paid a flat fee of 140,000 SLL ($16.80) to play the recorded debate at at specified time; ii) column 2 outcomes relate to any subsequent screenings after the first subsidized screening that were neither subsidized nor encouraged by the research team; iii) subsidized attendees are voters with a voucher, unsubsidized attendees are those who arrived unsolicited and without vouchers; iv) revenue in column 1 includes the flat up front payment and tickets sales from unsubsidized voters, in column 2 revenue is solely from ticket sales; and v) dollar exchange rate is for December 2018.

ONLINE APPENDIX: MATERIAL NOT INTENDED FOR PUBLICATION

"The Incentives to (Not) Debate in Low-Information Races," by Casey and Glennerster 2024

Contents:

Appendix A: Candidate Elicitation Script

1. Initial Contact

(Please follow this script for contacting all candidates.)

Hello, my name is XX and I work with Search for Common Ground, or Talking Drum Studio, and we have been providing credible and unbiased media content in Sierra Leone for over 17 years. We are currently hosting public debates between Parliamentary candidates in the run up to the March 7 general elections. Can you confirm your name, your political party, and your constituency number? What is your birthday? *(Enumerator: Please record the candidate's birthday in Survey CTO. Only continue the call if the person confirms that they are the MP candidate for the correct political party for the correct constituency. If they are not the right person, ask if they have the phone number of the MP candidate for that party and constituency).*

As you may know, we hosted MP candidate debates in 14 constituencies in the 2012 elections as a pilot. We found that debates were very effective in informing voters about policy positions and professional qualifications of candidates from different political parties.

We now have resources to host several more debates for the 2018 elections and are looking for additional constituencies to host them in. All debates will be shared with voters via large public film screenings or radio. The debates will bring together candidates from all political parties to present themselves to their constituents and share their views about the development of their constituency and the country as a whole. We have informed all political parties that these debates will occur.

To have your constituency considered for a debate please follow **two steps:**

Step one: Call us at ### ## ## ## by **Saturday, February 10**, to request a debate in your constituency and indicate that you are willing to participate. *(Enumerator: Even if the candidate expresses interest during the call, explain that he or she must call the number ### ## ## ## to formally request a debate in their constituency and express their interest in participating).*

Step two: How many MP candidates are running in this constituency? Please coordinate with all of the MP candidates in this constituency and mutually agree on a date, time, and location for the debate during the week of February 14 – 21. Please get as many MP candidates to agree as possible and each candidate should call Talking Drum Studio at ### ## ## ## to confirm these details by **Tuesday, February 13.** Please make sure that **candidates from other parties** call us at ### ## ## ## to confirm their willingness to participate in a debate.

Unfortunately, our budget only allows us to host debates in a limited number of constituencies so a lottery will determine whether your constituency is selected to have a debate. We will call you again by **February 16** if your constituency is selected by lottery to have a parliamentary candidate debate. All costs associated with hosting and disseminating the debate will be covered by Talking Drum Studio.

After this call, I will send you an SMS with the phone number to call to indicate your interest in the debates. To confirm, is this the best phone number to reach you? Do you have an additional phone number? If so, can you please share your second phone number? *(Enumerator: please record the second phone number they provide)*

We also have a letter detailing all of the information I have just explained to you. I can share this letter with you via Whatsapp or email, which would you prefer? *(Enumerator: Depending on their response, please ask them for their Whatsapp number or email address).*

Do you have any questions regarding any of the information I have just shared? *(Enumerator: If they have any questions, please clarify the information outlined above and see below for answers to commonly asked questions).*

Thank you very much. Have a nice day.

(Enumerator: After the call ends, please enter all relevant data from the call into Survey CTO and send the following SMS message to the candidate:

"Debates inform voters. If you want a debate in your constituency, call Talking Drum Studio at ### ## ## ## by February 10.")

--

2. Incoming call from candidate to express interest

(This script is for incoming calls from candidates that want to express their interest)

Hello, this is [Name] from Search for Common Ground. Or Talking Drum Studio. Can you confirm your name, your political party, and your constituency?

(If the candidate calls to indicate their interest in participating in a debate say): Thank you for your interest in participating in a MP debate in your constituency. We have recorded your preference. As a **second step**, please coordinate with all of the MP candidates in this constituency and mutually agree on a date, time, and location for the debate during the week of February 14 – 21. Please get as many MP candidates to agree as possible and each candidate should call Talking Drum Studio at ### ## ## ## to confirm these details **by Tuesday, February 13**.

We will inform you by **February 16** if your constituency is selected by lottery to have a debate.

Thank you for your interest.

(Enumerator: After the call ends, please enter all relevant data from the call into Survey CTO and send a SMS message to the candidate:

"Thank you for your interest in debates. Please coordinate with all MP candidates in this constituency and agree upon a date, time, and place for a debate. All candidates should call Talking Drum Studio at ### ## ## ## to confirm these details by February 13.")

--

3. Incoming call from candidate to coordinate with rival candidates

(*This script is for incoming calls from candidates that want to provide information on coordinating with their rival candidates*)

Hello, this is [Name] from Search for Common Ground, or Talking Drum Studio. Can you confirm your name, your political party, and your constituency?

Thank you for your interest in participating in a MP debate in your constituency. Have you been able to coordinate with the other MP candidates running in your constituency? If so, what is the date, time, and location you have mutually agreed to have a debate? Please remind the other candidates to also call this number to confirm they have agreed to these details. *(Enumerator: Please record this information in Survey CTO).*

We will inform you by February 16 if your constituency is selected by lottery to have a debate.

Thank you for your interest.

For Enumerators: Answers to Commonly Asked Questions

1. What are the chances that my constituency will get a debate?

    We will select the constituencies for debate via a random lottery. All constituencies have an equal chance of receiving a debate. We will contact you by February 22 if your constituency is selected to have a debate.

2. How many other candidates or political parties will participate?

    We will invite the candidates from all political parties and registered independent candidates in this constituency to participate in the debate. The debate will occur as long as one candidate shows up.

3. Can someone else represent me or a rival party candidate in the debate?

    No, representatives of candidates cannot participate in the debate. <u>Only the candidate themselves</u> can participate in the debate.

4. Will you cover my transportation costs for participating in the debate?

    If your constituency is randomly selected to receive a debate by large public film screening, we will cover your transportation costs for filming the debate. If your constituency is randomly selected to receive a debate by radio broadcast, we will cover the radio airtime for the debate but we will not pay for your transportation to the radio station to participate in the debate.

5. Have the political parties approved of these debates?

   Yes, all political parties have been informed that these debates are occurring. We are also working in partnership with the National Electoral Commission (NEC) and the Political Parties Registration Commission (PPRC), who have approved these debates.

6. Do I need to coordinate with the candidate from my rival party(s) in order to participate in the debate?

   We encourage you to coordinate with the candidate from your rival party(s) to arrange a time, date, and location for the debate. Both you and the rival candidate(s) should then call Talking Drum Studio at ### ## ## ## to confirm these details by February 13. Constituencies will be selected by lottery by February 16 to have a debate.
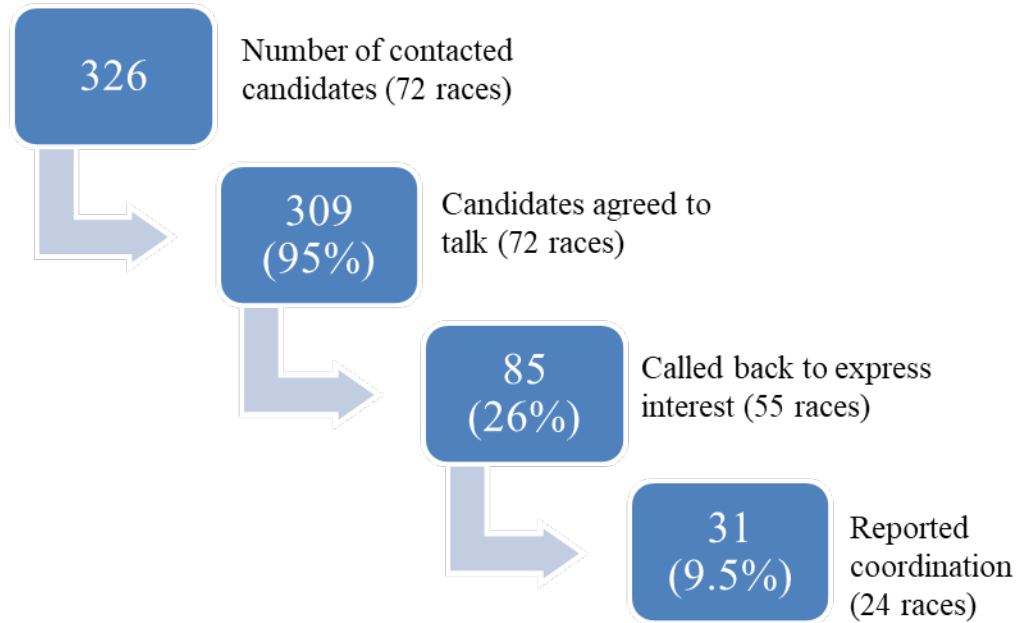
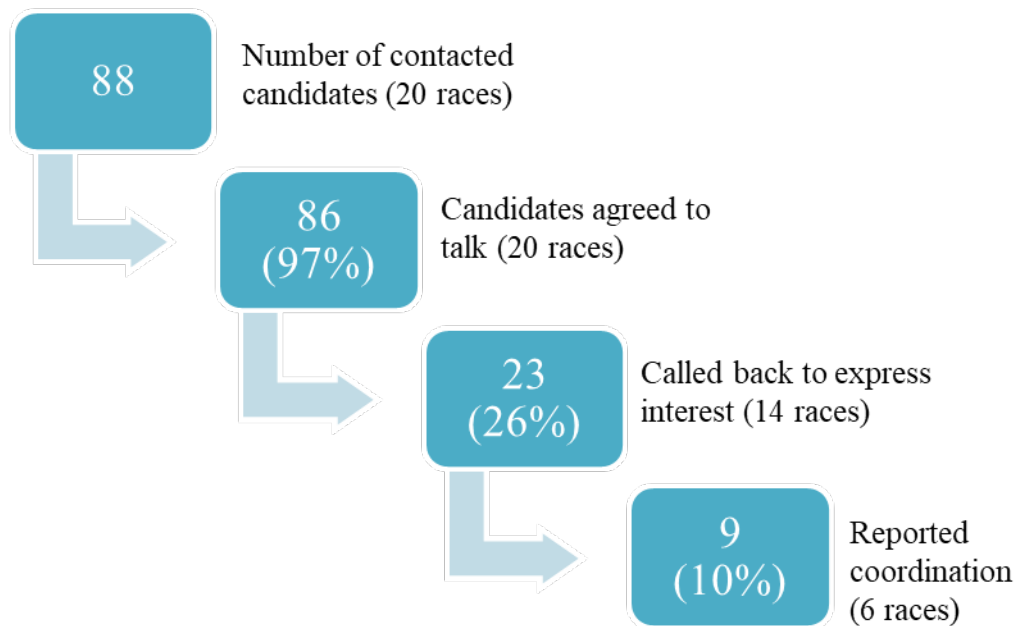**Appendix B: Additional Figures**

Figure A1: Research Design
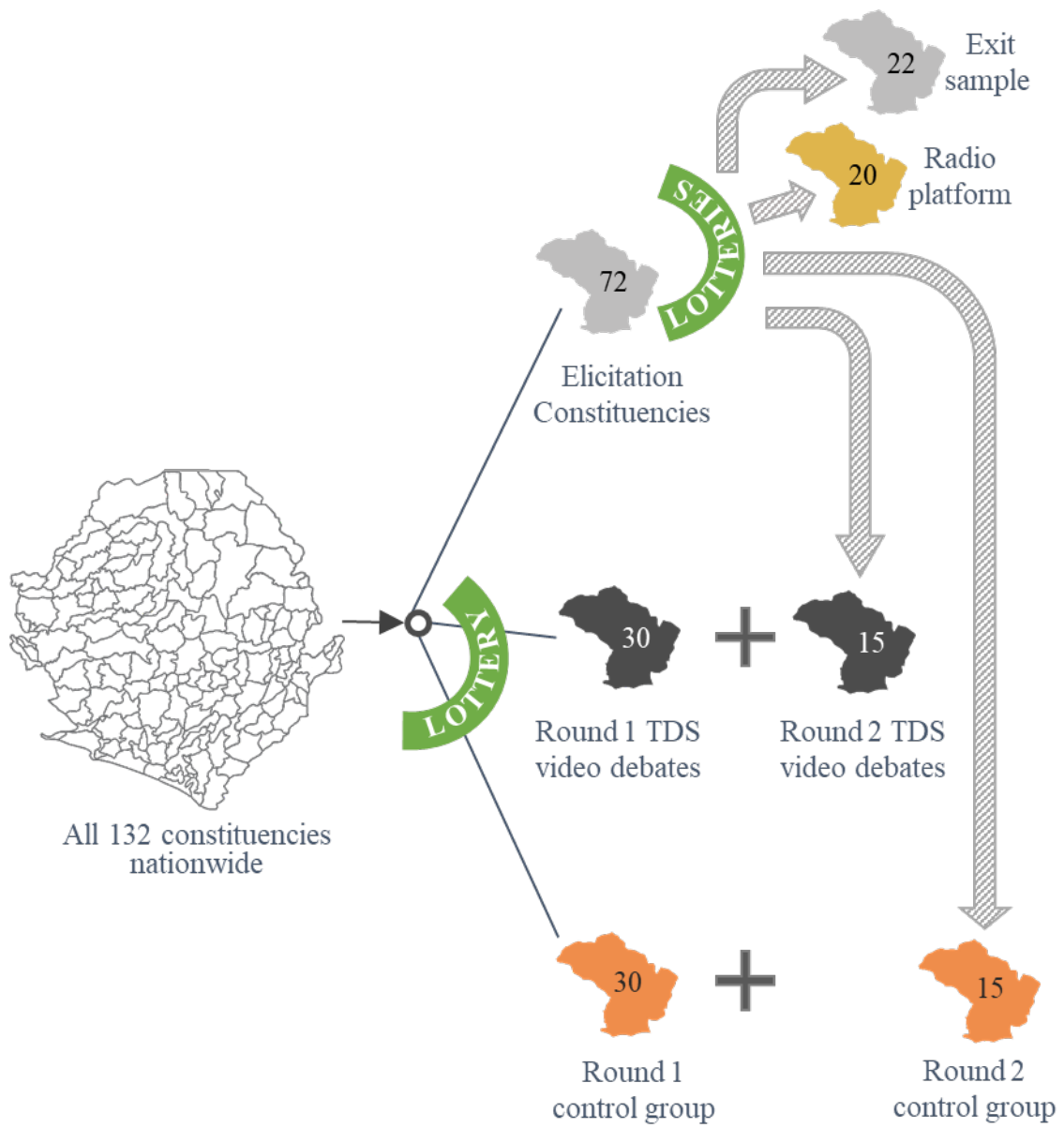
Figure A2: Candidate Elicitation Rates across Samples

Panel A: All 72 Elicitation Races

Panel B: Subsample of 20 Radio Platform Races

Notes: This figure displays responses rates to the candidate willingness to participate in debates for the full private elicitation sample of 72 races (in panel A) and the subset of 20 radio platform races (in panel B).

Table A1: Heterogeneity in Candidate Private Elicitation Call Back Rates

	Major party	Frontrunner	Swing constituency	Incumbent
	(1)	(2)	(3)	(4)
Proportion call back	-0.118**	-0.106*	0.0914	-0.0539
	(0.0488)	(0.0611)	(0.0635)	(0.0720)
Omitted group mean	0.307	0.278	0.236	0.267
Omitted group share of sample	0.610	0.850	0.755	0.883
Observations (candidates)	326	326	326	326

Note: This table shows differences in the proportion of candidates who call back to express interest in having a debate hosted in their constituency. In this analysis: i) significance levels indicated by *p<0.10 **p<0.05 ***p<0.01; ii) robust standard errors; iii) all specifications include assignment strata; iv) the omitted category in column 1 is all parties other than the APC and SLPP; v) the outcome indicator in column 3 equals one for candidates from a major party in its respective regional stronghold; vi) the omitted category in column 3 is APC or SLPP stronghold; vii) the omitted category in column 4 is candidates not elected to be MPs in 2012; and viii) all proportions are conditional on candidates being contacted on a working phone number.

Table A2: Candidate Participation in Debates by Platform Type

		2018 Radio		2018 Film		2012 Pilot Film	
		Opted in	N in race	Opted in	N in race	Opted in	N in race
		(1)	(2)	(3)	(4)	(5)	(6)
Major Parties:	APC	0.35	20	0.64	45	0.93	14
	SLPP	0.40	20	0.80	45	1.00	14
	Both	0.20	20	0.49	45	0.93	14
Minor Parties:	PMDC	.	.	.	.	0.75	9
	NGC	0.55	20	0.55	42	.	.
	C4C	0.50	20	0.38	45	.	.
Pr(in debate | invited)		0.45		0.59		0.91	
Mean debaters per race		2.4		3.4		2.4	

Note: the opt in rates in columns (1), (3) and (5) are conditional on the party running a candidate in that constituency as shown in (2), (4) and (6). Data for columns (5) and (6) is from Bidwell et al (2020).

Appendix D: Conceptual Framework

A Model of Incentives to Debate

Colin Aitken

University of Chicago

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Stanford University and NBER

Rachel Glennerster

University of Chicago, Center for Global Development, and NBER

We study the following Bayesian game played by N candidates and a continuum of voters. The model is meant to illustrate a potential explanation for the empirical findings, rather than to represent a full investigation of debate games of this format.

At the beginning of the game, each candidate draws a quality variable Q_i, which is known to the other candidates but not to voters. We do not need to assume that the distributions from which the Q_i are drawn are identical, but we assume the Q_i are independent from one another and that the distributions they are drawn from are continuous and known to voters.

Each candidate then independently decides whether to debate or abstain. If candidate i debates, voters receive a signal $Q_i^* = Q_i + \varepsilon_i$, where ε_i is a noise term drawn from a known distribution. For most of this appendix we will assume $\varepsilon_i = 0$ with probability 1, so voters learn the actual quality of candidates who choose to debate.

At the end of the game, voters vote for their preferred candidate. We assume a continuum of voters, whose idiosyncratic preferences for candidate i are modelled as a random variable μ_i. This random variable captures the probability that a randomly chosen voter has a given preference. For example, the statement

$$P[\mu_1 > \mu_2] = 0.2$$

would indicate that 20 percent of voters have an idiosyncratic preference for candidate 1 over candidate 2. We assume this distribution is common knowledge. When referring to the preferences of a specific voter v, we will use μ_{iv} to indicate a draw from this distribution.

Voter v gains utility $\mu_{iv} + Q_i$ if they vote for a candidate with quality Q_i. (We assume sincere voting. In the two-candidate game at the end of this appendix, we could equivalently assume voters have preferences over election outcomes instead of merely over whom they vote for, but with more candidates the possibility of strategic voting would lead the analysis too far astray from the mechanisms we are hoping to understand.)

After the election, candidate i receives utility

$$\alpha V_i + \beta W_i - C D_i$$

where V_i indicates the candidate's vote share (where the total vote share is normalized to 1), W_i is an indicator variable for winning the election, and D_i is an indicator for whether the candidate chose to debate. If candidates tie, they split the bonus for winning the election equally.[1] We assume α, β, and C are all nonnegative.

We are interested in analyzing Perfect Bayesian Equilibria (PBE) of this game. In a PBE, each player chooses a strategy conditional on the current state of the game and their beliefs about other players. These strategies must satisfy two conditions:

1. **Sequential rationality:** each player's strategy maximizes their expected utility, conditional on their beliefs and the strategies of the other players.

2. **Consistency:** players' beliefs update based on the actions of other players according to Bayes' rule.

Together, these two rules imply that voter v chooses to maximize their expected utility, which (since they may not know Q_i for all candidates) is equal to

$$\mu_{iv} + \mathrm{E}[Q_i | H^d]$$

where H^d is the set of information available to voters after a debate occurs in which the set d of candidates participated. (So, for example, for candidates whose quality is revealed through a debate the second term will be equal to Q_i, while for candidates who abstain, or for whom the debate is noisy, there will be some uncertainty.)

As a result, voter behavior on the equilibrium path is completely determined by the strategies of candidates, the random draws of Q_i, and by ε_i in the variant of the model in which we allow $\varepsilon_i \neq 0$. In general, the vote share of candidate j will be

$$\mathrm{P}\left(\mathrm{E}[Q_j | H^d] + \mu_j \geq \max_{i \neq j} \mathrm{E}[Q_i | H^d] + \mu_i\right)$$

where we treat $E[Q_i | H^d]$ as fixed and the μ_i's as random variables. However, these constraints do not place restrictions on *off-path beliefs*: that is, beliefs voters hold about candidate quality in scenarios that occur with probability zero (conditional on the random draws of Q_i) in the proposed equilibrium. This can lead to absurd equilibria:[2]

Example 1. *Consider the two-candidate game. There is an equilibrium in which both candidates abstain, in which voters believe candidates who abstain have quality 0 if neither candidate debates, or have quality ∞ if exactly one candidate debates.*

In this case, candidates are trapped in a bad equilibrium by voters' beliefs: either candidate's decision to debate will cause voters to "update" their beliefs about their rival in a way that ensures

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[1] Note that ties are possible even if all the underlying distributions are atomless: for example, if no candidates debate and voters' beliefs and preferences are symmetric, then all candidates will be assumed to have the same quality and an equal fraction of voters will vote for each candidate.
[2] We thank Ken Shotts for this insight.

a loss. These updates are irrational in the colloquial sense, but because they are off-path they are not ruled out by the conditions for a PBE.

We are not aware of generally applicable refinements to the notion of PBE that would rule out this particular kind of incoherent voter behavior. To make our model more realistic, we further place the following *coherence conditions* on our equilibria.

3. **Shared beliefs:** Voters all hold identical beliefs about candidates. These beliefs must match reality if a candidate's quality is revealed, even off-path.

4. **Monotonicity:** Let H^1 be any information set available to voters after a particular debate occurs. Let H^2 be an information set after a debate in which every candidate who chose to debate in H^1 also debates in H^2, as well as at least one additional candidate. All candidates who debate in both sets reveal the same quality in each. Moreover, suppose that candidate i does not debate in either set. Then,

$$E[Q_i|H^1] \geq E[Q_i|H^2]$$

where the expectation is taken over the distribution of qualities voters believe the candidate might have, given their information set.

Notice that condition 4 rules out the pathological equilibrium described above: if one candidate chooses to debate, voters are free to take that as a signal of strength and negatively update their views of candidates who abstain. But they should not *positively* update their views of candidates who abstain.

Of course, this does not rule out the possibility that one candidate's decision to debate may still *cause* a voter to vote for a candidate who abstains. For example, if a voter thinks candidate 1 is likely to have quality 0, and candidate 2 chooses to debate and reveals their quality to be -100, then a voter with small partisan preferences will likely vote for candidate 1, even if they initially leaned towards candidate 2. But under condition 4 they may not assume that, because a low-quality candidate chose to debate, abstaining candidate 1's quality is higher (in *absolute* terms) than they initially believed.

Throughout this appendix, we use "equilibrium" to mean a PBE further satisfying conditions 3 and 4. We first analyze this in the setting when candidate qualities are publicly known.

Lemma A. *The probability*

$$P\left(Q_j + \mu_j \geq \max_{i \neq j} Q_i + \mu_i\right)$$

representing the vote share of candidate j when all Q_is are known is continuously and monotonically increasing in Q_j.

Proof. Let F_i denote the cdf of $\mu_i + Q_i$, treating Q_i as a constant and μ_i as a random variable. The cdf $M(x)$ of

$$\max_{i \neq j} Q_i + \mu_i$$

is then given by

$$M(x) = \prod_{i \neq j} F_i(x).$$

Candidate j's vote share is then given by

$$\int 1 - F_j(x) dM(x).$$

Setting F equal to the cdf of μ_1, we can then rewrite this as

$$\int \left(1 - F(x - Q_1)\right) M'(x) dx$$

which is a continuous and monotonically increasing function of Q_1 since M and F each are. $\square$

Proposition 1. *If the cost to debate C is zero and debates are noiseless, then there exists at least one equilibrium, and in any equilibrium all candidates choose to debate.*

Proof. Intuitively, this is an "unraveling" result: high-quality candidates will choose to debate because otherwise they will lose the votes of voters who assume any candidate who abstains is of middling quality. Knowing this, voters will infer that the average abstainer must have low quality. But then the candidates of middling quality will choose to debate to avoid being lumped in with this low-quality group, so the average abstainer will have *very* low quality. As voters and candidates adapt to one another's choices, the decision to abstain "unravels" and everyone debates. (Note that this result relies on our assumption that candidates receive utility from vote shares even if they do not win the election.)

More formally, we first show that there is an equilibrium in which all candidates debate. Second, we show that there cannot be an equilibrium in which any candidate abstains with nonzero probability. Equilibrium candidate behavior will thus be unique, and only voters' off path beliefs may differentiate one equilibrium from another.

The first is straightforward: if all candidates choose to debate, and voter v votes for the candidate i with the highest value of $Q_i + \mu_{iv}$ under the (off-path) belief that any candidate who does not debate has quality equal to $-\infty$, then nobody has an incentive to deviate. The other equilibrium conditions are easily checked.

We now show there cannot be an equilibrium such that any candidate abstains. Suppose that there is some draw $Q_1, \cdots, Q_N$ such that candidate j prefers to abstain. As described above, the vote share of candidate j after the debate will be

$$P\left(E[Q_j|H^d] + \mu_j \geq \max_{i \neq j} \mathrm{E}[\,Q_i|\,H^d] + \mu_i\right),$$

where we again compute the probability treating μ as a random variable and the expected value terms as constants.

Now, let H^0 denote the voters' information set if candidate j abstains, and let H^1 denote the voters' information set if candidate j debates, holding all other candidates' behavior fixed. For candidate j to not debate, we require that

$$P\left(E[Q_j|\,H^0] + \mu_j \geq \max_{i \neq j} \mathrm{E}[\,Q_i|\,H^0] + \mu_i\right) \geq P\left(Q_j + \mu_j \geq \max_{i \neq j} \mathrm{E}[\,Q_i|H^1] + \mu_i\right).$$

For candidates i who choose to debate, we have $E[Q_i|H^0] = E[Q_i|H^1] = Q_i$, while for candidates who abstain we have $E[Q_i|H^0] \geq E[Q_i|H^1]$ by the monotonicity assumption (condition 4).

Let $Q_j^* = E\big[Q_j\big|H^0\big]$ denote the quality voters impute to candidate j in the (on-path) condition that j abstains. Intuitively, candidate j will only abstain if $Q_j \leq Q_j^*$. But since voters' beliefs about candidate quality must be consistent, it must follow that $Q_j = Q_j^*$ with probability one conditional on H^0. (Indeed, if a random variable takes on a value less than its maximum with nonzero probability, its expected value cannot be that maximum.)

We formalize this intuition as follows. For sake of contradiction, we assume that $Q_j > E\big[Q_j\big|H^0\big]$, in which case we must have

$$P\left(E[Q_j|H^0] + \mu_j \geq \max_{i \neq j} \mathrm{E}[\,Q_i|H^0] + \mu_i\right) < P\left(Q_j + \mu_j \geq \max_{i \neq j} \mathrm{E}[\,Q_i|H^0] + \mu_i\right)$$

$$\leq P\left(Q_j + \mu_j \geq \max_{i \neq j} \mathrm{E}[\,Q_i|H^1] + \mu_i\right),$$

where the first inequality follows from Lemma A with $E[Q_i|H^0]$ (which is being held constant) in place of Q_i. This contradicts the previous inequality, so candidate j will choose to debate whenever $Q_j > Q_j^*$.

It must follow that for values of Q_j for which a candidate prefers to abstain, namely for $Q_j < Q_j^*$,

$$P\big(Q_j \leq Q_j^*|H^0\big) = 1$$

and hence for voters' beliefs about candidate j to be consistent we must have

$$P\big(Q_j = Q_j^*|H^0\big) = 1$$

so (fixing all other candidates' qualities and debating decisions) there is exactly one value of Q_j for which candidate j chooses not to debate.

Integrating over all debating decision and candidate quality draws, we see that candidate j chooses to debate with probability 1. □

We now modify the game slightly to conceal the debate decision from voters. This distinguishes the mechanism in which candidates choose to debate because it benefits them, from a mechanism in which candidates choose to debate because voters punish them for abstaining.

Corollary 2. *Suppose $C = 0$ and debates are noiseless. Consider a modified game in which a debate only occurs if all candidates participate, and if any abstain, voters do not observe which candidate(s) chose to abstain, merely that a debate did not occur. In this game, in any equilibrium the probability of a debate occurring is zero.*

Proof. There is clearly an equilibrium in which all candidates abstain, voters assume all candidates have quality zero, and in the (off-equilibrium path) event that a debate does occur, voters update their beliefs to match observed quality. To see this, note that the lowest quality candidate will always abstain, and, knowing this, all higher quality candidates cannot take any action to alter their payoffs, so are indifferent between choosing to debate or abstain.

Now, suppose there exists an equilibrium such that, with nonzero probability, a debate occurs. Suppose that, if a debate does not occur, candidate j will receive some fraction π_j of the vote. We need to show that, with probability 1, there is some candidate k who receives less than π_k in the event of a debate. This will contradict the claimed equilibrium, because this candidate can unilaterally prevent a debate from occurring.

Without loss of generality, consider the first candidate. For given values of $Q_2, \ldots, Q_N$, Proposition 1 implies that there are a finite number of realized values of Q_1 such that the candidate receives π_1 in a debate.[3] Integrating over all possible realized values of the other Q's, we see that the probability of this occurring is zero. In particular, with probability 1 the first candidate will either receive greater than or less than π_1 votes if a debate occurs. Since the game is zero sum, with probability one at least one candidate k must receive less than π_k votes if a debate occurs. This candidate would prefer not to debate, contradicting the proposed equilibrium. □

Proposition 3. *For cost greater than some $\bar{C}$ candidates will not debate.*

Proof. Set $\bar{C}$ equal to the largest possible payout (i.e., winning 100% of the vote). □

The game becomes more complicated when we add noise. If a high-quality candidate might (by chance) lose a debate to a less qualified candidate, the choice to debate carries a risk and voters

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[3] There is one choice ensuring candidate 1 gets the same vote share, and potentially a finite number of additional cases in which, e.g., the first candidate loses vote share but ekes out a plurality and wins the election.

need to decide how to interpret the results. In the following simplified example, we show that noise can deter candidates from debating.

Proposition 4. *Suppose there are only two candidates. For sufficiently small (but positive) costs, there exist distributions of $\mu, \varepsilon,$ and Q such that:*

    i.   *When debates are noiseless, any equilibrium must have a debate occur with positive probability.*

    ii.   *Beyond a sufficient threshold of noise, equilibria exist in which both candidates always abstain.*

Proof. We assume the μ_{iv} have independent standard normal distributions, and assume some known $\bar{Q}$ and $\bar{\varepsilon}$ such that the Q_i are independently uniformly distributed on the interval $[0, \bar{Q}]$ and the ε_i are independently uniformly distributed on the interval $[0, \bar{\varepsilon}]$. Further, we assume $C < \beta/2$, where β is the utility gain from winning the election.

First, suppose debates are noiseless (that is, $\bar{\varepsilon} = 0$) and suppose there exists an equilibrium in which both candidates abstain. By condition 2 of an equilibrium, voters must believe that both candidates have quality $\bar{Q}/2$. With probability 0.5, candidate 1 will draw some quality $Q_1 > \bar{Q}/2$.

We show that for $Q_1 > \bar{Q}/2$, candidate 1 has a profitable deviation to debate. If candidate 1 chooses to debate, condition 3 above implies that voters will (accurately) believe that they have quality Q_1. By condition 4 above, voters continue to believe that candidate 2 has quality $\bar{Q}/2$, or even lower quality. In particular, candidate 1's vote share will be at least

$$P(\mu_2 - \mu_1 \leq Q_1 - \bar{Q}/2),$$

which is greater than 0.5, so candidate 1 will win the election and obtain utility

$$\beta + \alpha * P\left(\mu_2 - \mu_1 \leq Q_1 - \frac{1}{2}\bar{Q}\right) - C \geq \frac{1}{2}\beta + \frac{1}{2}\alpha.$$

Candidate 1 is therefore better off debating than abstaining. This contradicts condition 1, and so there cannot be such an equilibrium.

Now, suppose $\bar{\varepsilon} > 0$. There is an equilibrium in which voters believe all candidates have quality $\frac{1}{2}\bar{Q}$, regardless of whether they debate, in which case neither candidate debates. (This is not ruled out by the conditions above because the beliefs about candidates who debate are off-path, and a candidate's debate performance does not inform voters about their actual quality.)

Even though this equilibrium is compatible with the conditions we've placed (or any generally applicable conditions we are aware of), it is somewhat pathological: voters do not use the actual outcome of the debates at all. We therefore provide a threshold equilibrium for $\bar{\varepsilon} \gg 0$, in which voters' beliefs are more intuitively reasonable, but candidates still choose to abstain.

We define voter beliefs within this equilibrium as follows. Voters start by assuming a candidate's quality is drawn uniformly from $[0, \bar{Q}]$. If a candidate debates, voters apply a Bayesian update to

this belief using the observed signal from the debate. The conditions of an equilibrium then require that they base any decisions off the mean of their posterior beliefs about the candidate.

Most of the conditions of an equilibrium are straightforward to check. The only challenging one is to show that no candidate has an incentive to debate. If a candidate abstains, voters' posterior belief about that candidate is a uniform distribution on $[0, \bar{Q}]$, so voters behave as if the candidate has quality $\bar{Q}/2$.

For high $\bar{\varepsilon}$ the debate is almost completely uninformative, and thus has an extremely small effect on a candidate's probability of winning. Because the cost of debating is $C > 0$, the candidate thus prefers to abstain. If candidate i chooses to debate, voters observe a signal $z_i = Q_i + \varepsilon_i$, where ε_i is uniformly distributed on the interval $[0, \bar{\varepsilon}]$.

Their resulting posterior distribution for Q_i has mean

$$
m(x \mid z_i) = \begin{cases} z_i/2 & \text{if } 0 \leq z_i < \bar{Q} \\ \bar{Q}/2 & \text{if } \bar{Q} \leq z_i \leq \bar{\epsilon} \\ z_i/2 - \bar{\epsilon}/2 + \bar{Q}/2 & \text{if } \bar{\epsilon} \leq z_i \leq \bar{\epsilon} + \bar{Q} \\ 0 & \text{otherwise.} \end{cases}
$$

Now, suppose a candidate draws quality Q_i. The expected value (over draws of ε_i) of $m(x \mid z_i)$ is given by

$$
\begin{aligned}
\mathbb{E}[m(x \mid z) \mid Q_i = Q] &= \frac{1}{\bar{\epsilon}} \int_Q^{Q+\bar{\epsilon}} f(x|z) \, \mathrm{d}z \\
&= \frac{1}{\bar{\epsilon}} \left(\int_Q^{\bar{Q}} f(x|z) \, \mathrm{d}z + \int_{\bar{Q}}^{\bar{\epsilon}} f(x|z) \, \mathrm{d}z + \int_{\bar{\epsilon}}^{Q+\bar{\epsilon}} f(x|z) \, \mathrm{d}z \right) \\
&= \frac{1}{\bar{\epsilon}} \int_Q^{\bar{Q}} \frac{z}{2} \, \mathrm{d}z + \frac{1}{\bar{\epsilon}} \int_{\bar{Q}}^{\bar{\epsilon}} \frac{\bar{Q}}{2} \, \mathrm{d}z + \frac{1}{\bar{\epsilon}} \int_{\bar{\epsilon}}^{Q+\bar{\epsilon}} \frac{z - \bar{\epsilon} + \bar{Q}}{2} \, \mathrm{d}z \\
&= \frac{1}{2}\bar{Q} + \frac{\bar{Q}}{2\bar{\epsilon}}(Q - \frac{1}{2}\bar{Q}).
\end{aligned}
$$

Similarly, the probability that $m(x \mid z_i)$ is strictly greater than $\frac{1}{2}\bar{Q}$ for a given value $Q_i = Q$ is $Q/\bar{\varepsilon}$. Together, these imply that a candidate with $Q_i = Q$ prefers to debate if and only if

$$
\alpha \frac{\bar{Q}}{2\bar{\varepsilon}}\left(Q - \frac{1}{2}\bar{Q}\right) + \frac{\beta}{2} \frac{Q}{\bar{\varepsilon}} > C
$$

Since is Q bounded above by $\bar{Q}$, the left-hand side approaches zero uniformly as $\bar{\varepsilon} \to \infty$ but the right-hand remains fixed. Thus, for large $\bar{\varepsilon}$, neither candidate benefits from deviating from their abstention strategy and this is indeed a PBE. □