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Does Electoral Competition Create Incentives for Political Parties to Collect Information about the Pros and Cons of Alternative Policies?*

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Abstract

A well-known rationale for representative democracy is that direct democracy leads to a free-rider problem as to the collection of information. A problem with this rationale is that it takes for granted that representatives collect information. In this paper we examine whether or not electoral competition induces political parties or candidates to collect information about policy consequences. We show that the answer to this question depends on the cost of information collection. More surprisingly, we find that endogenizing information may lead to divergence of policy platforms.

Key words: information collection, spatial voting models

JEL Classification: D72, E83

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1 Introduction

In most democratic societies, policy decisions are delegated to elected politicians: in practice democracy is representative rather than direct. A well-known rationale for representative democracy is that direct democracy leads to a serious free-rider problem as to the collection of information. The reason is simple. The analysis of the full consequences of policy alternatives is complicated and costly. When in communities with many citizens decisions are made through referenda, individuals lack incentives to examine policy consequences. The cost of collecting information almost always exceeds the benefit, because the probability that one's vote is decisive is negligible. A problem with this rationale for representative democracy is that it takes for granted that representatives do collect information.

In this paper we examine whether or not electoral competition induces political parties or candidates to collect information about policy consequences. To this end, we employ a simple spatial voting model, in which two parties compete for office. The elections revolve around a single issue. As to this issue, there are three options, say, cut spending, maintain spending and increase spending. Partly, voters' preferences over the three alternatives are exogenous. However, voters may change preferences over policies when new information about their pros and cons becomes available. Because of "rational ignorance", voters do not search for information that bears on the pros and cons of policy options. Before elections are held, parties may collect information. Collecting information is costly. After the two parties have had the opportunity to find information, they simultaneously select a party platform (one of the policy alternatives). Next, the parties campaign. In the campaign, parties can try to make a case for their platform. Arguments in favor of one's own platform or arguments against the platform of the opponent, if found, can be supplied in the campaign. After the campaign, elections are held. The winning party takes office and implements its program.

We derive two main results. Our first result is not very surprising. Whether or not parties collect information depends on the cost of information. If this cost is sufficiently low, each party searches for both arguments in favor and arguments against policy alternatives. If this cost is sufficiently high, neither party collects information. In the intermediate case an equilibrium exists, in which one party searches for arguments in one direction, say increase spending, whereas the other party searches for arguments in the other direction.

Our second result is more interesting. In the equilibrium in which one party searches for arguments in favor of one alternative, while the other party searches for arguments in favor of another alternative, divergence of platforms may occur. One party either chooses "increase spending" or "status quo", depending on the information it has found, while the other party either chooses "decrease spending" or "status quo". It is worth emphasizing that this result is obtained under the assumption that parties primarily care about winning the elections.

This paper is closely related to the literature on pre-election politics. In this literature, the essential policy decisions are made before the elections (Persson and Tabellini, 2000). An important result is that electoral competition between two parties or candidates leads to convergence of platforms (Downs, 1957). Calvert (1985) argues that this result is robust by pointing out that if parties care about policy outcomes (rather than about winning elections) they also tend to choose the same policy platform.[1] We show that endogenizing information may affect the convergent result.

Our paper also builds on Dewatripont and Tirole (1999), henceforth DT. DT consider a situation in which a decision maker is uncertain about the pros and cons of alternative policies. They argue that it could be efficient for an organization to let advocates of specific interests collect information about the pros and cons of alternative policy options. The reason is that stakes in the decision process create strong incentives for agents to collect information. An important difference between DT and our paper is that, in our paper agents are driven by electoral motives, whereas in DT agents are driven by monetary rewards.

This paper is organized as follows. The next section discusses the model. Section 3 describes the equilibria. Section 4 concludes.

[1] Alesina and Rosenthal (1995) argue that the convergent result is not as robust as Calvert suggests. A basic assumption underlying Calvert's result is that parties can make credible commitments to carry out announced campaign promises after being elected. If parties are unable to make precommitments, even a small amount of policy preferences breaks down the convergent outcome. Alesina (1988) shows that complete or partial convergence can only occur if the interaction between parties is modelled as an infinitely repeated game.

2 The model

We consider a society inhabited by a continuum of voters. Each voter i has quadratic preferences over policy, X. There are three alternative policies: $X \in \{-1, 0, 1\}$. Voter i's preferences are represented by

$$U_i = -\left[X - \left(X_i^d + \theta\right)\right]^2 \tag{1}$$

where X_i^d denotes the voter's type and θ is a stochastic term. This term consists of two parts:

$$\theta = \theta_A + \theta_B$$

where θ_A is equal to $-z$ or 0 with equal probability, and θ_B is equal to z or 0 with equal probability. In (1), $X_i^d + \theta$ denotes voter i's bliss point. The stochastic term θ reflects that voters are uncertain about policy consequences. A straightforward interpretation of θ_A is that there might be arguments for restrictive policy ($X = -1$). Likewise, θ_B captures that there might be arguments for intensifying policy ($X = 1$). We assume that θ_A and θ_B contain hard information that can be conveyed to voters. The position of the median voter is given by $X_m^d = 0$.

Two parties, denoted by L and R, compete for office. Before the elections, each party can learn the values of the stochastic terms. For each party, there are four alternatives. First, at a cost C_2 ($j = L, R$) party J learns both θ_A and θ_B, $L_J = AB$. Second and third, at a cost $C_1 < C_2$, party J learns either θ_A ($L_J = A$) or θ_B ($L_J = B$). Finally, party J can decide to learn nothing ($L_J = 0$).

After the parties have had the opportunities to learn the stochastic terms, they simultaneously select their party platforms, $X_J = \{-1, 0, 1\}$. We assume that parties select X_J with a view to win the election. Formally, party J selects X_J so as to maximize π_J, where π_J is the probability that party J wins the election. Parties care about policy outcomes in case policy outcomes do not affect their chances of winning the elections. In that case, party L prefers $X = -1$ to $X = 0$ and $X = 0$ to $X = 1$, while party R prefers $X = 1$ to $X = 0$ and $X = 0$ to $X = -1$. Parties have thus lexicographic preferences: policy outcomes matter only if they do not affect parties' chances of winning the elections. We assume that party platforms are binding. If elected, party J implements the platform it has announced. The preferences of party J are represented by

$$U_J = \lambda\pi_J \ - C$$

where λ denotes the value of holding office.

Before the elections, the parties campaign. In the campaign, parties try to make a case for their platform. Depending on what parties have learned about the stochastic terms, they can supply arguments in favor of their own platform or supply arguments against the platform of their opponent. We assume that information about the stochastic terms can be concealed, but cannot be forged. After the campaign elections are held, in which voters choose between the two parties. In our model, preferences are single-peaked. It is well-known that in such a model the choice of the median voter is decisive. From now on, we will treat our model as a game with three players, Party L, party R and the median voter, voter M.

3 Equilibrium

This section presents the equilibria of our game. Each equilibrium identifies the strategy of each party, i.e. it describes a party's decision about the information it collects, the platform it selects and the information it supplies in the campaign. Moreover, an equilibrium describes how the median voter updates his beliefs about the stochastic terms, and for which party he votes. In equilibrium, the strategies of the parties and the median voter are optimal responses to each other, and beliefs are updated according to Bayes' Rule.

On the basis of the cost of information collection and the value of z, three equilibria in pure strategies and one equilibrium in mixed strategies can be distinguished. Proposition 1 gives the conditions under which an equilibrium exists in which both parties investigate both stochastic terms.

Proposition 1 *Suppose $C_2 < \frac{1}{4}\lambda$ and $z > \frac{1}{2}$. Then, an equilibrium exists in which $L_L = L_R = AB$; the following platforms are chosen: $X_L = X_R = 0$ if $\theta_A = 0$ and $\theta_B = 0$, $X_L = X_R = -1$ if $\theta_A = -z$ and $\theta_B = 0$, $X_L = X_R = 1$ if $\theta_A = 0$ and $\theta_B = z$ and $X_L = X_R = 0$ if $\theta_A = -z$ and $\theta_B = z$. If found, parties supply information about the pros and cons of policy alternatives.*

Proof. The proof of this proposition and other propositions can be found in the Appendix. ■

Proposition 1 states that if the cost of collecting full information is low and z is sufficiently large, then parties are willing to incur the cost of learning the full consequences of alternative policies. Moreover, under those conditions parties choose the same platforms. The intuition behind Proposition 1 is straightforward. If z is sufficiently large, information about the pros and cons of policies may convince the median voter that $X = 0$ is not optimal. Being better informed about policy consequences may thus be the key to office. If a party finds arguments in favor or against a policy, supplying this information to voters weakly dominates not supplying this information. Weakly, because the other party may supply the same information. Under the conditions stated in Proposition 1, parties and voters are eventually fully informed. It is therefore not surprising that, as in conventional spatial voting models, party platforms fully converge.

In the case that the cost of collecting full information is sufficiently high, parties will only collect partial information if the cost of collecting partial information is low and z is sufficiently large. The conditions under which this equilibrium holds, are discussed in Proposition 2.

Proposition 2 *Suppose* $\frac{1}{4}\lambda + C_1 < C_2 < \frac{1}{2}\lambda$, $C_1 < \frac{1}{4}\lambda$ *and* $z > \frac{1}{2}$. *Then, an equilibrium exists in which* $L_L = A$ *and* $L_R = B$*; the following platforms are chosen: party* L *chooses* $X_L = 0$ *if* $\theta_A = 0$ *and* $X_L = -1$ *if* $\theta_A = -z$ *and party* R *chooses* $X_R = 0$ *if* $\theta_B = 0$ *and* $X_R = 1$ *if* $\theta_B = z$. *If found, party* L *supplies information about the pros of* $X = -1$ *and party* R *supplies information about the pros of* $X = 1$.

Proposition 2 describes an equilibrium in which party L searches for arguments in favor of restrictive policy (θ_A) and party R searches for arguments in favor of intensifying policy (θ_B). In this case parties have asymmetric information, party L learns θ_A and party R learns θ_B. The choice of platforms depends on the information parties find. Party L chooses "decrease spending" if it finds arguments in favor of this policy alternative and else it chooses "status quo". Party R, on the other hand, chooses "increase spending" if it finds arguments in favor of this policy alternative and else it chooses "status quo". Full convergence of political platforms only occurs if neither one of the parties finds arguments in favor of the policy alternative it has investigated.

Finally, if collecting information is too costly, parties decide to learn nothing. Proposition 3 shows under which conditions both parties decide to learn nothing. As in conventional spatial-voting models, the choice of platforms depends only on the position of the median voter. It is not surprising that both parties choose the platform $X = 0$. Parties also decide not to search for information if z is small enough.

Proposition 3 *Suppose collecting information is too costly ($C_1 > \frac{1}{4}\lambda$) or $z < \frac{1}{2}$. Then, an equilibrium exists in which parties decide not to collect information ($L_L = L_R = 0$). The following platforms are chosen: $X_L = X_R = 0$.*

In Propositions 1,2 and 3 we have seen under which conditions political parties collect full information, partial information or no information. There is one equilibrium that we have not discussed yet. Suppose that the costs of collecting information are $\frac{1}{4}\lambda < C_2 < \frac{1}{4}\lambda + C_1$ and $C_1 < \frac{1}{4}\lambda$, then an equilibrium in pure strategies does not exist. There exists an equilibrium in which parties randomize between collecting full information, collecting partial information and collecting no information. This equilibrium is described in Proposition 4.

Proposition 4 *Suppose $\frac{1}{4}\lambda < C_2 < \frac{1}{4}\lambda + C_1$, $C_1 < \frac{1}{4}\lambda$ and $z > \frac{1}{2}$. Then, an equilibrium in mixed strategies exists. Party L (R) chooses $L_L = AB$ ($L_R = AB$) with probability $\frac{\frac{1}{4}\lambda - C_1}{\frac{1}{4}\lambda}$, $L_L = A$ ($L_R = B$) with probability $\frac{C_2 - \frac{1}{4}\lambda}{\frac{1}{4}\lambda}$ and $L_L = 0$ ($L_R = 0$) with probability $\frac{C_1 - C_2 + \frac{1}{4}\lambda}{\frac{1}{4}\lambda}$. The choice of platforms depends on the information parties have collected. There are nine possible outcomes.*

To understand proposition 4 let us first consider the payoff matrix parties face in the first stage.

	$L_R = AB$	$L_R = B$	$L_R = 0$
$L_L = AB$	$\frac{1}{2}\lambda - C_2, \frac{1}{2}\lambda - C_2$	$\frac{3}{4}\lambda - C_2, \frac{1}{4}\lambda - C_1$	$\frac{3}{4}\lambda - C_2, \frac{1}{4}\lambda$
$L_L = A$	$\frac{1}{4}\lambda - C_1, \frac{3}{4}\lambda - C_2$	$\frac{1}{2}\lambda - C_1, \frac{1}{2}\lambda - C_1$	$\frac{3}{4}\lambda - C_1, \frac{1}{4}\lambda$
$L_L = 0$	$\frac{1}{4}\lambda, \frac{3}{4}\lambda - C_2$	$\frac{1}{4}\lambda, \frac{3}{4}\lambda - C_1$	$\frac{1}{2}\lambda, \frac{1}{2}\lambda$

Proposition 4 states that there does not exist an equilibrium in pure strategies if $\frac{1}{4}\lambda < C_2 < \frac{1}{4}\lambda + C_1$, $C_1 < \frac{1}{4}\lambda$ and $z > \frac{1}{2}$. The reason is that parties always have an incentive to deviate. Suppose that party L collects full information, then party R prefers to collect no information. But, given that party R collects no information, party L achieves a higher payoff by collecting partial information. And, given that party L collects partial information, party R prefers to collect full information.

In equilibrium both parties randomize between collecting full information, partial information and no information. The intuition behind this equilibrium is that collecting full information is costly. Therefore parties only want to collect full information if the other party is collecting partial information. In the other cases parties prefer to collect either partial information or no information. Because parties decide simultaneously how much information to collect, they are uncertain about the amount of information the other party is going to collect. Therefore collecting full information, collecting partial information and collecting no information can all be a best response. Parties play each of the three actions with positive probability.

Proposition 4 presents the probabilities of collecting full information, partial information and no information. The probabilities depend on the value of holding office (λ) and on the costs of collecting information. First we consider the effect of a change in λ on the probability of collecting full, partial or no information. The parameter λ has a positive effect on the probability of collecting full information. So, political parties have a stronger incentive to collect full information if the value of office (λ) increases. The intuition is that as λ increases, winning the elections becomes more important to parties. And, by collecting full information, parties can increase the probability of winning the elections. Besides the effect on the probability of collecting full information, changing λ also affects the probability of collecting partial information and the probability of collecting no information. The parameter λ has a negative effect on the probability of collecting partial information and a positive effect on the probability of collecting no information. These findings can be explained by the positive effect of λ on the probability of collecting full information. We have already seen that given that one party collects full information, the other party is best off collecting no information. This means that if the probability of collecting full information increases as λ increases, the probability of collecting no information also increases. In a similar way we can explain that the probability of collecting partial information decreases as λ increases.

Next, let us consider the effect of a change in the cost of information on the probability of collecting full information. The probability of collecting full information only depends on the cost of collecting partial information. As the cost of collecting partial information increases, the probability of collecting full information decreases. The reason is that as the cost of collecting partial information increases, collecting partial information becomes more costly resulting in a weaker incentive to collect partial information. We have already shown that collecting full information is only a best response if the other party collects partial information. This means that a weaker incentive to collect partial information reduces the probability of collecting full information. Surprising is that the probability of collecting full information does not depend on the cost of collecting full information. The reason is that two opposite effects play a role. On the one hand, parties have a weaker incentive to collect full information if the cost of collecting full information increases. On the other hand, the cost of collecting full information has a positive effect on the probability of collecting partial information. And, collecting partial information is a best response, given that the other party collects no information. In a similar way we can explain the effect of a change in the cost of information on the probability of collecting partial information and on the probability of collecting no information

4 Conclusion

In this paper we have analyzed under which conditions electoral competition induces political parties to collect information. We have considered a model of electoral competition in which parties are allowed to collect information before elections take place. In the electoral campaign, parties can use the information, if found, to make a case for their platform. With respect to the preferences of parties we have assumed that parties care only about winning the elections.

We have shown that whether or not parties collect information depends on the cost of information. More surprisingly, we find that endogenizing information may lead to divergence of policy platforms.

5 Appendix

Proofs

In this appendix, we show under which conditions parties collect full information, partial information or decide to learn nothing. Parties face nine feasible outcomes. We treat each outcome separately.

CASE 1. Suppose $L_L = L_R = AB$. Each party has full information about the alternative policies. If $z > \frac{1}{2}$, party L and R choose $X_L = X_R = 0$ if $\theta_A = 0$ and $\theta_B = 0$, $X_L = X_R = -1$ if $\theta_A = -z$ and $\theta_B = 0$, $X_L = X_R = 1$ if $\theta_A = 0$ and $\theta_B = z$ and $X_L = X_R = 0$ if $\theta_A = -z$ and $\theta_B = z$. The payoffs of both parties equal $\frac{1}{2}\lambda - C_2$. If $z < \frac{1}{2}$, the parties choose $X_L = X_R = 0$. The payoffs of both parties equal $\frac{1}{2}\lambda - C_2$.

CASE 2. Suppose $L_L = AB$ and $L_R = B$. Then party L learns θ_A and θ_B and party R only learns θ_B. If $z > \frac{1}{2}$, party L chooses $X_L = 0$ if $\theta_A = 0$ and $\theta_B = 0$, $X_L = -1$ if $\theta_A = -z$ and $\theta_B = 0$, $X_L = 1$ if $\theta_A = 0$ and $\theta_B = z$ and $X_L = 0$ if $\theta_A = -z$ and $\theta_B = z$. Party R chooses $X_R = 1$ if $\theta_B = z$ and $X_R = 0$ if $\theta_B = 0$. If party R learns that $\theta_B = z$, $X = 0$ and $X = 1$ yield the same expected probability of winning the elections. Because of the lexicographic preference relation of parties, party R prefers $X = 1$. If $\theta_B = 0$, $X = 0$ and $X = -1$ yield the same probability of winning. In this case party R prefers $X = 0$. The payoff of party L equals $\frac{3}{4}\lambda - C_2$ and the payoff of party R equals $\frac{1}{4}\lambda - C_1$. If $z < \frac{1}{2}$, the parties choose $X_L = X_R = 0$. The payoff of party L equals $\frac{1}{2}\lambda - C_2$ and the payoff of party R equals $\frac{1}{2}\lambda - C_1$.

CASE 3. Suppose $L_L = AB$ and $L_R = 0$. Then only party L learns θ_A and θ_B and party R learns nothing. If $z > \frac{1}{2}$, party L chooses $X_L = 0$ if $\theta_A = 0$ and $\theta_B = 0$, $X_L = -1$ if $\theta_A = -z$ and $\theta_B = 0$, $X_L = 1$ if $\theta_A = 0$ and $\theta_B = z$ and $X_L = 0$ if $\theta_A = -z$ and $\theta_B = z$. Party R chooses $X_R = 0$. The payoff of party L equals $\frac{3}{4}\lambda - C_2$ and the payoff of party R equals $\frac{1}{4}\lambda$. If $z < \frac{1}{2}$, the parties choose $X_L = X_R = 0$. The payoff of party L equals $\frac{1}{2}\lambda - C_2$ and the payoff of party R equals $\frac{1}{2}\lambda$.

CASE 4. Suppose $L_L = A$ and $L_R = AB$. Then party L only learns θ_A and party R learns θ_A and θ_B. If $z > \frac{1}{2}$, party R chooses $X_R = 0$ if $\theta_A = 0$ and $\theta_B = 0$, $X_R = -1$ if $\theta_A = -z$ and $\theta_B = 0$, $X_R = 1$ if $\theta_A = 0$ and $\theta_B = z$ and $X_R = 0$ if $\theta_A = -z$ and $\theta_B = z$. Party L chooses $X_L = -1$ if $\theta_A = -z$ and $X_L = 0$ if $\theta_A = 0$. The payoff of party R equals $\frac{3}{4}\lambda - C_2$ and the payoff of party L equals $\frac{1}{4}\lambda - C_1$. If

$z < \frac{1}{2}$, the parties choose $X_L = X_R = 0$. The payoff of party R equals $\frac{1}{2}\lambda - C_2$ and the payoff of party L equals $\frac{1}{2}\lambda - C_1$.

Case 5. Suppose $L_L = 0$ and $L_R = AB$. Then only party R learns θ_A and θ_B and party L learns nothing. If $z > \frac{1}{2}$, party R chooses $X_R = 0$ if $\theta_A = 0$ and $\theta_B = 0$, $X_R = -1$ if $\theta_A = -z$ and $\theta_B = 0$, $X_R = 1$ if $\theta_A = 0$ and $\theta_B = z$ and $X_R = 0$ if $\theta_A = -z$ and $\theta_B = z$. Party L chooses $X_L = 0$. The payoff of party R equals $\frac{3}{4}\lambda - C_2$ and the payoff of party L equals $\frac{1}{4}\lambda$. If $z < \frac{1}{2}$, parties choose $X_L = X_R = 0$. The payoff of party R equals $\frac{1}{2}\lambda - C_2$ and the payoff of party L equals $\frac{1}{2}\lambda$.

Case 6. Suppose $L_L = A$ and $L_R = B$. Then party L learns θ_A and party R learns θ_B. If $z > \frac{1}{2}$, party L chooses $X_L = -1$ if $\theta_A = -z$ and $X_L = 0$ if $\theta_A = 0$. Party R chooses $X_R = 1$ if $\theta_B = z$ and $X_R = 0$ if $\theta_B = 0$. The payoffs of both parties equal $\frac{1}{2}\lambda - C_1$. If $z < \frac{1}{2}$, the parties choose $X_L = X_R = 0$. The payoffs of both parties equal $\frac{1}{2}\lambda - C_1$.

Case 7. Suppose $L_L = A$ and $L_R = 0$. Then party L learns θ_A and party R learns nothing. If $z > \frac{1}{2}$, party L chooses $X_L = -1$ if $\theta_A = -z$ and $X_L = 0$ if $\theta_A = 0$. Party R chooses $X_R = 0$. The payoff of party L equals $\frac{3}{4}\lambda - C_1$ and the payoff of party R equals $\frac{1}{4}\lambda$. If $z < \frac{1}{2}$, the parties choose $X_L = X_R = 0$. The payoff of party L equals $\frac{1}{2}\lambda - C_1$ and the payoff of party R equals $\frac{1}{2}\lambda$.

Case 8. Suppose $L_L = 0$ and $L_R = B$. Then party L learns nothing and party R learns θ_B. If $z > \frac{1}{2}$, party R chooses $X_R = 1$ if $\theta_B = z$ and $X_R = 0$ if $\theta_B = 0$. Party L chooses $X_L = 0$. The payoff of party R equals $\frac{3}{4}\lambda - C_1$ and the payoff of party L equals $\frac{1}{4}\lambda$. If $z < \frac{1}{2}$, parties choose $X_L = X_R = 0$. The payoff of party R equals $\frac{1}{2}\lambda - C_1$ and the payoff of party L equals $\frac{1}{2}\lambda$.

Case 9. Suppose $L_L = L_R = 0$. Then parties choose $X_L = X_R = 0$. The payoffs of both parties equal $\frac{1}{2}\lambda$.

For $z > \frac{1}{2}$ we have summarized the cases in a payoff matrix.

	$L_R = AB$	$L_R = B$	$L_R = 0$
$L_L = AB$	$\frac{1}{2}\lambda - C_2, \frac{1}{2}\lambda - C_2$	$\frac{3}{4}\lambda - C_2, \frac{1}{4}\lambda - C_1$	$\frac{3}{4}\lambda - C_2, \frac{1}{4}\lambda$
$L_L = A$	$\frac{1}{4}\lambda - C_1, \frac{3}{4}\lambda - C_2$	$\frac{1}{2}\lambda - C_1, \frac{1}{2}\lambda - C_1$	$\frac{3}{4}\lambda - C_1, \frac{1}{4}\lambda$
$L_L = 0$	$\frac{1}{4}\lambda, \frac{3}{4}\lambda - C_2$	$\frac{1}{4}\lambda, \frac{3}{4}\lambda - C_1$	$\frac{1}{2}\lambda, \frac{1}{2}\lambda$

Proof of Proposition 1

Suppose $z > \frac{1}{2}$ and $C_2 < \frac{1}{4}\lambda$. Then investigating both parts of the stochastic term strictly dominates not investigating the stochastic term. The strategy investigate both parts also dominates the strategy investigate only one part of the stochastic term ($C_2 < \frac{1}{4}\lambda + C_1$). This means that independent of the choice of party L, party R always chooses to investigate both parts if $C_2 < \frac{1}{4}\lambda$. The same is true for party L.

If $z > \frac{1}{2}$, both parties collect full information if $C_2 < \frac{1}{4}\lambda$. The following platforms are chosen: $X_L = X_R = 0$ if $\theta_A = 0$ and $\theta_B = 0$, $X_L = X_R = -1$ if $\theta_A = -z$ and $\theta_B = 0$, $X_L = X_R = 1$ if $\theta_A = 0$ and $\theta_B = z$ and $X_L = X_R = 0$ if $\theta_A = -z$ and $\theta_B = z$. QED

Proof of Proposition 2

Suppose $z > \frac{1}{2}$, $\frac{1}{4}\lambda + C_1 < C_2 < \frac{1}{2}\lambda$ and $C_1 < \frac{1}{4}\lambda$. Then investigating both parts is too costly. Neither one of the parties will collect full information. The strategy investigate both parts of the stochastic term is dominated by the strategy investigate only one part. We can restrict our attention to the last four cases (case 6, 7, 8 and 9). If $C_1 < \frac{1}{4}\lambda$, the strategy investigate one part of the stochastic term strictly dominates the strategy not investigate the stochastic term. Given that party L investigates θ_A, party R will investigate θ_B if $\frac{1}{2}\lambda - C_1 > \frac{1}{4}\lambda$ ($C_1 < \frac{1}{4}\lambda$). Given that party L does not investigate θ_A, party R will investigate θ_B if $\frac{3}{4}\lambda - C_1 > \frac{1}{2}\lambda$ ($C_1 < \frac{1}{4}\lambda$). The same can be done to determine the optimal strategy of party L.

If $z > \frac{1}{2}$, parties investigate one part of the stochastic term if $C_1 < \frac{1}{4}\lambda$ and $\frac{1}{4}\lambda + C_1 < C_2 < \frac{1}{2}\lambda$. The following platforms are chosen: party L chooses $X_L = -1$ if $\theta_A = -z$ and $X_L = 0$ if $\theta_A = 0$ and party R chooses $X_R = 1$ if $\theta_B = z$ and $X_R = 0$ if $\theta_B = 0$. QED

Proof of Proposition 3

Suppose $z > \frac{1}{2}$ and $C_1 > \frac{1}{4}\lambda$. Then both parties decide to learn nothing. Both parties choose the platform which lies closest to the median voter, $X_L = X_R = 0$. Also if $z < \frac{1}{2}$, parties decide not to collect information. If $z < \frac{1}{2}$, investigating the stochastic term is strictly dominated by not investigating the stochastic term ($\frac{1}{2}\lambda - C_1 < \frac{1}{2}\lambda$). QED

Proof of Proposition 4

Suppose $z > \frac{1}{2}$, $\frac{1}{4}\lambda < C_2 < \frac{1}{4}\lambda + C_1$ and $C_1 < \frac{1}{4}\lambda$. Then there is no equilibrium in pure strategies. To find an equilibrium in mixed strategies we define α as the probability that $L_R = AB$, β as the probability that $L_R = B$ and $\gamma = 1 - \alpha - \beta$

as the probability that $L_R = 0$. The payoff to party L, of choosing respectively $L_L = AB$, $L_L = A$ and $L_L = 0$, is:

$$\begin{aligned}
\Pi(AB) &= \left(\frac{1}{2}\lambda - C_2\right)\alpha + \left(\frac{3}{4}\lambda - C_2\right)\beta + \left(\frac{3}{4}\lambda - C_2\right)(1-\alpha-\beta) \\
&= \frac{3}{4}\lambda - C_2 - \frac{1}{4}\lambda\alpha \\
\Pi(A) &= \left(\frac{1}{4}\lambda - C_1\right)\alpha + \left(\frac{1}{2}\lambda - C_1\right)\beta + \left(\frac{3}{4}\lambda - C_1\right)(1-\alpha-\beta) \\
&= \frac{3}{4}\lambda - C_1 - \frac{1}{2}\lambda\alpha - \frac{1}{4}\lambda\beta \\
\Pi(0) &= \frac{1}{4}\lambda\alpha + \frac{1}{4}\beta - \frac{1}{2}(1-\alpha-\beta) \\
&= \frac{1}{2}\lambda - \frac{1}{4}\lambda\alpha - \frac{1}{4}\lambda\beta
\end{aligned}$$

For a mixed strategy to be an equilibrium we must have that party L is indifferent between $L_L = AB$, $L_L = A$ and $L_L = 0$. This occurs if:

$$\begin{aligned}
\alpha &= \frac{\frac{1}{4}\lambda - C_1}{\frac{1}{4}\lambda} \\
\beta &= \frac{C_2 - \frac{1}{4}\lambda}{\frac{1}{4}\lambda} \\
\gamma &= \frac{\frac{1}{4}\lambda + C_1 - C_2}{\frac{1}{4}\lambda}
\end{aligned}$$

Due to symmetry we find the same probabilities for party L. Party L (R) chooses $L_L = AB$ ($L_R = AB$) with probability $\frac{\frac{1}{4}\lambda - C_1}{\frac{1}{4}\lambda}$, $L_L = A$ ($L_R = B$) with probability $\frac{C_2 - \frac{1}{4}\lambda}{\frac{1}{4}\lambda}$ and $L_L = 0$ ($L_R = 0$) with probability $\frac{C_1 - C_2 + \frac{1}{4}\lambda}{\frac{1}{4}\lambda}$. The choice of platforms depends on the information parties have collected in the first stage. All nine cases have a positive probability of occurring. The probabilities of collecting full information, collecting partial information and collecting no information lie between 0 and 1 if the following conditions hold:

$$\begin{aligned}
0 &< \alpha < 1 \text{ if } 0 < C_1 < \frac{1}{4}\lambda \\
0 &< \beta < 1 \text{ if } \frac{1}{4}\lambda < C_2 < \frac{1}{2}\lambda \\
0 &< \gamma < 1 \text{ if } C_1 < C_2 < \frac{1}{4}\lambda + C_1
\end{aligned}$$

If one of the conditions is not satisfied, parties choose one of three equilibria in pure strategies discussed in Propositions 1, 2 and 3. Suppose $C_1 > \frac{1}{4}\lambda$. Then both parties decide to learn nothing, because it gives the highest payoff. This equilibrium is discussed in Proposition 3. Suppose that $C_1 < \frac{1}{4}\lambda$ and $C_2 > \frac{1}{4}\lambda + C_1$. Then both parties collect partial information. This equilibrium is discussed in Proposition 2. Finally, suppose that $C_1 < \frac{1}{4}\lambda$ and $C_2 < \frac{1}{4}\lambda$. Then both parties will collect full information (Proposition 1). QED

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