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POLITICAL INFORMATION ACQUISITION FOR SOCIAL EXCHANGE

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Abstract

We model political information acquisition in large elections, where the probability of being pivotal is negligible. Our model builds on the assumption that informed citizens enjoy discussing politics with other informed citizens. The resulting information acquisition game exhibits strategic complementarities. We find that information acquisition depends negatively on the social distance between citizens. Next, we build an application of the model to the distributive politics game. Equilibrium policies are biased towards regions/groups with lower social distance between citizens. Finally, we present evidence for the basic model's main prediction based on the data from the 2000 U.S. National Elections Study. Citizens with a shorter residence span (thus having a less developed local social network, i.e. facing a larger social distance) acquire significantly less political information than the otherwise similar long-term residents.

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"*One way of acquiring opinions in ... the personality-enriching manner is to give them definite shape only after they have passed through intense confrontation with other views ...*" (Hirschman (1989))

"For the citizens [of Denmark before the referendum on Maastricht Treaty] the incentives to be informed were greater, as the intense discussions ... transformed the fact of 'having a reasoned opinion' partly into a private good ..." (Benz and Stutzer (2004))

1 Introduction

This paper looks at citizens' political information acquisition in elections. Economists' interest in this question is threefold.

First, the recent positive models of local public finance show that regions where voters are more informed receive more public spending. Thus, unequal distribution of political information across regions leads to an inefficient allocation of public expenditures. Besley and Burgess (2002) show, in a political agency model, that the regions with better informed citizens are able to monitor government performance better, and thus enjoy more responsive public policies. Testing the model on the panel data from Indian states, they find that the states with higher newspaper circulation receive a larger share in calamity relief expenditure. Stromberg (2004) shows that the introduction of a new mass medium has two effects on local public spending: the direct effect of giving better information about the elected representatives' performance, and the indirect effect of inducing higher turnout. He then tests the model on the data from the New Deal relief programs in the U.S. in 1930s, and finds that the asymmetry in the expansion of radio

across counties led, through both effects, to a strong bias in public spending towards counties with more informed voters. In both papers the information is supply driven. However, the advent of a new information supply source is a rare event. Thus the challenge remains to explain the variation of information in the absence of these supply changes.

Second, recent surveys on pension reform by Boeri and Tabellini (2005) show that voters' information matters for the viability of political reforms. Their findings suggest that informing citizens about the payoffs from reforms might help to overcome broad opposition and create political support for reforming the welfare state. However, they also show that a higher supply of information does not affect the information take-up. Thus, the problem is to explain what drives the demand for political information.

Third, understanding political information acquisition helps to shed light on the long-standing problem in rational choice - explaining voter participation. Mueller and Stratmann (2003) find that voter turnout has a strong effect on government size and income inequality. However, as the recent survey by Feddersen (2004) concludes, we still do not have a coherent rational choice model that can explain key facts about voter turnout. The main difficulty is that in the standard pivotal-voter framework, the probability of being pivotal goes to zero very quickly as the size of the electorate grows. On the other hand, Lassen (2005) in a natural experiment shows that more information leads to a higher turnout. Given this, a promising step towards understanding turnout is to turn the question from "Why do citizens vote?" to "Why do citizens acquire costly political information?" In particular, can we explain variation in political information acquisition with variation in some observable individual or aggregate characteristics?

Understanding political information acquisition in large elections poses

a challenge: if information is costly, and the instrumental payoffs of getting informed are negligible (because the probability of being pivotal goes to zero), one cannot explain why so many citizens spend time getting informed. This is the well-known "rational ignorance" problem first raised by Downs (1957). The U.S. National Elections Study of 2000 shows that about 30% of the respondents have followed in full at least one TV debate between Gore and Bush, and about 44% have read about the presidential election campaign in newspapers.

Everyday observation suggests, though, that campaign periods represent moments of heated political discussions among citizens, and having an informed opinion serves as a 'ticket' for entering such discussions. Benz and Stutzer (2004) state that "in the weeks preceding the vote [at the Swiss referendum on joining the EU in 1992], it was almost impossible not to get involved in the fierce discussions on the subject, and consequently, the incentives to be informed were high". This opens a promising alternative route to understanding information acquisition: citizens may spend time acquiring political information to form opinions that serve them in discussions and social interactions with other fellow citizens.

This paper builds a model that explicitly incorporates social-interactions motive into voters' information acquisition decision. A citizen receives utility from exchanging political opinions with another citizen in a randomly formed match. Such social exchange, however, pays off only when both partners possess political information. Obtaining this information is costly. Thus, the information acquisition game exhibits a key strategic complementarity: a citizen deciding to get informed increases the likelihood that any other citizen will match an informed partner. This increases the expected benefit from acquiring information for any citizen.

Our game falls into the class of global games first analyzed by Carlsson and van Damme (1993). A key property of such games it that they have a unique equilibrium. In our model, the equilibrium depends on three parameters: the social distance between the citizens, the average electoral salience, and the information cost. Our main theoretical finding is that citizens are more likely to acquire political information when the social distance between them is lower.

Next, we build an application of the basic model in the distributive politics game. Central government allocates local public spending among N regions that differ in the degree of social distance between the citizens. These differences determine the share of informed citizens in each region, and together with it, the political "attractiveness" of the region relative to the other regions. Thus, in equilibrium, the regions with a lower social distance receive more transfers from the center.

We then provide evidence for the main prediction of our basic model, using the data from the 2000 U.S. National Elections Study. The data strongly supports our theoretical prediction. We find that the length of residence positively correlates with political information acquisition. Citizens that have resided longer in their current homes (and thus have a deeper social network and face a higher smaller social distance) are more likely to pay strong attention to the electoral campaign and to follow political debates in TV among presidential candidates.

Several papers have looked at this and related questions. Matsusaka (1995) builds a pivotal-voter model in a decision-theoretic framework with endogenous information acquisition to explain a set of basic facts about turnout. He shows that the inclusion of endogenous information helps to understand the facts about turnout. However, the model still cannot ex-

plain why such a large share of the electorate gets informed. Similarly, Martinelli (2002) looks at information acquisition in a pivotal-voter model in a game-theoretic framework. He shows that as the size of electorate increases, individual political information acquisition goes to zero. The focus of his paper, though, is a normative one, and he shows that under certain conditions, majority rule elections outcome corresponds to the interest of the majority, even with little aggregate information acquisition. From the positive point of view, though, the model suffers of the same difficulties of its predecessor.

The papers that looked at the supply side of information acquisition have had more empirical success. The aforementioned paper of Besley and Burgess (2002) finds that higher literacy increases newspaper circulation. Stromberg (2004) and Gentzkow (2003) look at two cases of the expansion of a new mass medium: radio and TV, respectively. The first paper finds that the expansion of radio increased turnout, while the second shows that the expansion of TV decreased it. Gentzkow (2003) explains the latter fact as caused by the lower information content of TV. Larcinese (2000) models information acquisition as private production with mass media and time devoted to their usage as inputs. He finds that higher quality-newspaper readership correlates with better information. Finally, Lassen (2005) shows that the direct experience of living in a region with a certain policy leads to more information about the policy.

A key empirical contribution to explaining the demand side of the political information is the paper by Benz and Stutzer (2004). They show that the political system significantly influences voters' information. In particular, the systems that confer more extended political participation rights induce citizens to get informed better. The difference of this paper from that of

Benz and Stutzer is twofold: first, we build a formal theoretic model to lead empirical analysis, and second, we underline social determinants of political information acquisition (instead of the institutional ones).

Methodologically, our model makes part of the fast-growing class of interaction-based models. Such models have been successfully applied to the analysis of economic problems. Zanella (2004) offers an illuminative survey of this literature. Our paper also relates to the burgeoning literature on social capital, launched by Putnam (1993). One key empirical regularity found in this literature is that communities with higher social capital - the degree of trust among citizens or the degree of participation in social activities (sports or religious organizations) - have better economic policies. However, the theoretical analysis behind this finding is still scarce. An important paper by Alesina and La Ferrara (2000) shows that heterogeneous communities have a lower stock of social capital. In this paper, we help to clarify the next link - from social capital to voters' information. Thus, our analysis, together with the aforementioned papers on local public finance, completes the logical chain behind Putnam's empirical finding.

The main contributions of this paper are three. First, we propose a new promising route to understanding political information acquisition in large elections, and show its empirical relevance. Second, we clarify the missing theoretical link in the mechanism through which social capital affects economic policies. Finally, for the first time we introduce the promising interaction-based methodology into the analysis of political behavior.

The paper has the following structure. Part 2 presents the model and theoretically analyzes the determinants of political information acquisition. Part 3 presents the application to the distributive politics. Part 4 discusses the empirical strategy, the data, the potential empirical problems, and the

solutions that we propose. Part 5 presents the estimation results and performs sensitivity analysis. Part 6 discusses the implications of our findings and concludes.

2 The Model

2.1 Setup

Consider a community populated with a unit-size continuum of atomistic citizens, indexed by i, $i \in [0,1]$. The community holds the elections, to decide among a set of alternatives. The campaign precedes the elections, during which the citizens can acquire information about the alternatives.

The timing is as follows: (1) Citizens simultaneously decide whether to acquire information about the alternatives; (2) Nature randomly matches citizens into pairs; (3) Citizens engage in social exchange in pairs (and receive the payoffs).[1]

At the information acquisition stage, citizen i decides whether to acquire one indivisible piece of information at a given cost C. Thus, she faces a binary choice: to acquire information or not.[2]

Denote as θ the electoral salience. θ is an aggregate variable; however, we shall assume that citizens have idiosyncratic perceptions of the electoral salience. In particular, citizen i's perception of electoral salience is

$$\theta_i = \theta + \varepsilon_i, \tag{1}$$

The individual component ε_i is drawn from a differentiable c.d.f. $F(.)$ with

[1] The assumption of random matching is obviously unrealistic. Usually, people choose with whom to discuss politics, and this process of choice can affect the incentives for information acquisition. Thus, a more complete model would start with a stage where citizens form their social network. We leave this extension for future work.

[2] We can generalize this setup such that citizens decide how much information to acquire, using the model of Frankel et al. (2003), which is an extension of Carlsson and van Damme (1993) model that we use here. The key results are the same.

the real line as support, has a zero mean: $E(\varepsilon_i) = 0$, and its' distribution is symmetric: $F(0) = \frac{1}{2}$. It is independent across citizens and is drawn from the same distribution. Regarding the true salience θ, citizens have no a priori knowledge:

$$\theta \sim U(-a, a), \text{ with } a \to \infty. \tag{2}$$

Citizens use Bayesian updating with uninformative prior. Therefore, citizen i's best estimate of the true salience, θ, is her own perception, θ_i. If a citizen gets informed, she receives the private consumption utility which is equal to θ_i.

At the social exchange stage, the nature randomly matches citizen i to a citizen j. If both of them are informed, they discuss politics, and i gets the additional utility of θ_i/d, while j gets the additional utility of θ_j/d, where d stands for the measure of social distance. This latter measures how well people know each other. Thus, discussing a more salient election gives higher utility, and the utility is higher when citizens face a shorter social distance among themselves.[3]

If some partner in the match is uninformed, the partners discuss some side subject. We normalize the payoff from such discussion to zero.[4]

Figure 1 depicts the possible situations that arise at the social exchange stage, with resulting payoffs.

From the point of view of an informed citizen, there are two possible types of matches. If the nature matches her to an uninformed citizen, she

[3] The fact that the salience perception θ_i and the inverse of social distance $\frac{1}{d}$ are multiplicative is not essential. The theoretical findings are valid also in the case when the payoff from social exchange depends only on d.

[4] Social interactions themselves - discussing either politics or a side subject - are costless in this model. A more realistic model would consider the possibility that social interactions have an opportunity cost in terms of time, which would involve two dimensions of choice: whether to get informed and how much to interact. Our basic model abstracts from these considerations.

gets no payoff from social exchange (we call this "a bad match"). If the nature matches her to an informed citizen, she gets a positive payoff from social exchange (we call this "a good match").

Thus, the payoff of citizen i that gets informed and faces a good match is $-C + \theta_i + \frac{\theta_i}{d}$. She pays the cost C of getting informed, enjoys the private consumption utility θ_i, and gets utility from social exchange $\frac{\theta_i}{d}$. The payoff of an informed citizen facing a bad match is $-C+\theta_i$, since she gets no utility from social exchange. Finally, the payoff of an uninformed citizen is 0.

2.2 Equilibrium Information Acquisition

At the information acquisition stage, citizen i knows her signal about electoral salience, θ_i, social distance d, and the information cost C. The strategy is a mapping from the individual signal θ_i into the set of actions $\{0, 1\}$. Following Morris and Shin (2003), we consider only the types of strategies where a citizen takes the risky action 1 only if she observes a private signal above some cutoff point H:

$$s(\theta_i) = \begin{cases} \text{get informed if } \theta_i \geq H \\ \text{do not get informed otherwise,} \end{cases} \tag{3}$$

We call each such strategy "a switching strategy around H", and H "a switching point".

Let's define the equilibrium of the information acquisition game.

Definition 1 *A symmetric Nash equilibrium strategy of citizen i in the information acquisition game is a switching strategy around H_i that satisfies the following properties: (a) i plays 1 (acquires information), when the expected payoff of playing 1 exceeds the payoff of playing 0 (remaining uninformed), given the actions of other citizens; (b) i plays 0, when the expected*

payoff of getting informed is lower than the payoff of remaining uninformed, given the actions of other citizens; (c) $H_i = H$ for any i.

Let's analyze the possible situations at the social exchange stage.

An informed citizen i ends up either in a good match, or in a bad match. Her payoff in a good match is $-C + \theta_i + \frac{\theta_i}{d}$. In a bad match, her payoff is $-C + \theta_i$.

Denote as p the share of informed citizens. Since the matching is random and the community is unit-size, p is also the probability of getting in a good match.

Then, the expected payoff for citizen i from acquiring information is:

$$\begin{aligned} E\pi_i &= p[-C + \theta_i + \frac{\theta_i}{d}] + (1-p)[-C + \theta_i] = \\ &= -C + \theta_i + \frac{p\theta_i}{d}. \end{aligned} \tag{4}$$

An uninformed citizen gets payoff 0, regardless of a match she ends up in.

Therefore, citizen i gets informed if

$$E\pi_i \geq 0, \tag{5}$$

that is, if her signal, θ_i exceeds a threshold level:

$$\theta_i \geq \frac{C}{1 + \frac{p}{d}}. \tag{6}$$

Note that the information acquisition decision exhibits strategic complementarity. A citizen deciding to get informed increases any potential partner's expected payoff from acquiring information, because she decreases the threshold and increases the probability that a potential partner ends up in a good match. Given the assumptions on the random payoff structure, this

game falls into the class of global games, first analyzed in Carlsson and van Damme (1993) and further generalized by Morris and Shin (2003). The key property of a global game is the uniqueness of equilibrium.

The following proposition determines the unique equilibrium of the game.

Proposition 1 *The information acquisition game has a unique symmetric Nash equilibrium. The equilibrium strategy for every citizen i is*

$$\begin{cases} \text{get informed if } \theta_i \geq \frac{C}{1+\frac{1}{2d}} \\ \text{do not get informed otherwise.} \end{cases} \tag{7}$$

Proof. *Let citizen i observe θ_i and let her think that any potential partner j follows a switching strategy around H. The probability that j has a signal θ_j higher than H, given i's signal θ_i, is:*

$$\Pr\{\theta_j > H|\theta_i\} = \Pr\{\theta + \varepsilon_j > H|\theta_i\} =$$
$$= \Pr\{\theta_i + \varepsilon_j > H\} = \Pr\{\varepsilon_j > H - \theta_i\} = 1 - F(H - \theta_i) \tag{8}$$

Thus, from (6), citizen i gets informed if

$$\theta_i \geq \frac{C}{1 + \frac{1}{d}[1 - F(H - \theta_i)]} \tag{9}$$

Let now her signal θ_i be equal to H. Then, her rule becomes

$$v_i \geq \frac{C}{1 + \frac{1}{2d}}. \tag{10}$$

By symmetry, citizen i also follows the switching strategy around H. Thus,

$$H = \frac{C}{1 + \frac{1}{2d}}, \tag{11}$$

and any citizen follows the strategy (7). ■

The intuition behind this proposition is as follows. The expected benefit of getting informed is higher the bigger is the probability of matching with an informed partner, i.e. that any potential partner also acquires information. When everybody observes true θ, the game has the following equilibria:

- If $\theta > C$, the unique equilibrium is that every citizen gets informed.
- If $\theta < \frac{C}{1+\frac{1}{d}}$, the unique equilibrium is that nobody gets informed.
- If $\theta \in [\frac{C}{1+\frac{1}{d}}, C]$, the game has two pure-strategy Nash equilibria: everybody gets informed, or nobody gets informed.

However, given a small asymmetry in the signals about θ (and thus slightly asymmetric payoffs), this multiplicity of equilibria disappears. Only the citizens having a sufficiently high signal θ_i decide to acquire information. This occurs because their estimate of the average signal is high and thus their estimate of the probability that any given partner will be informed is high.

Figure 2 shows graphically the equilibrium strategy of players.

Given the Nash equilibrium strategies, we can easily find the probability that any given citizen gets informed, which is also the share of informed citizens in the population.

Corollary 2 *The equilibrium share of informed citizens is*

$$p = 1 - F(\frac{C}{1 + \frac{1}{2d}} - \theta). \tag{12}$$

Corollary 3 lends us several insights about the determinants of information acquisition. First, citizens get informed more when the social distance is shorter:

$$\frac{\partial p}{\partial d} < 0. \tag{13}$$

A shorter social distance decreases the threshold in the cutoff strategy. Thus, a citizen i's estimate of the share of informed citizens increases, and she is more likely to get informed.

Second, citizens get informed less if the information cost is higher:

$$\frac{\partial p}{\partial C} < 0. \tag{14}$$

A higher cost increases the threshold in the cutoff strategy; thus, a citizen i's estimate of the share of informed citizens decreases, and she is less likely to get informed.

Finally, citizens get informed more when the elections are more salient:

$$\frac{\partial p}{\partial \theta} > 0. \tag{15}$$

A higher salience moves the whole distribution up. Thus, there are more citizens for whom the threshold condition (7) is satisfied.

3 Application to Distributive Politics

In this section we present an application of the basic model to the distributive politics game.

3.1 Setup

There are N regions, denoted with $J = 1, ..., N$. Each has a population of unit size. All voters in all the regions have endowment 1. The regions differ in the degree of social distance, d^J.

The policy-maker decides on the level of local public spending (a transfer) in each region. The total public spending is financed with a lump sum uniform tax.

Voters' utility is quasilinear in consumption of a private good and public good (transfer):

$$w^J = c^J + Z(g^J), \tag{16}$$

with $Z(.)$ a concave.

In this setup, the utilitarian optimum is a vector of transfers g^{J*} such that:

$$\max_{\{g^J\}} \sum w^J, \text{ s.t. } Ny = \sum (c^J + g^J). \tag{17}$$

The first-order condition of this problem is:

$$-1 + Z_g(g^J) = 0 \text{ for any } J, \tag{18}$$

and thus the optimum vector of transfers is:

$$g^{J*} = Z_g^{-1}(1). \tag{19}$$

3.2 Electoral competition

Now assume that the policies are set by an elected representative. There are two candidates competing for the single policy-maker position: A, B. Both are opportunistic, that is they maximize the probability of being elected. The candidates aloso differ in a fixed ideology position (for example, belonging to a political party).

Voters' economic preferences are

$$W^J(\mathbf{g}) = 1 - \tau + Z(g^J) = 1 - \frac{1}{N}\sum_I g^I + Z(g^J). \tag{20}$$

Voters' political preferences are captured by the following function: for voter i in region J,

$$\omega^{iJ} = k^{iJ}W^J(\mathbf{g}) + (\sigma^{iJ} + \delta)D_B, \tag{21}$$

where σ^{iJ} is the individual taste shock, δ is the aggregate taste shock, and D_B is the dummy variable for candidate B's victory. k^{iJ} is the indicator variable such that:

$$k^{iJ} = \begin{cases} 1\text{ , if voter } i \text{ is informed} \\ 0\text{, otherwise.} \end{cases} \tag{22}$$

That is, we assume that informed voters (thus knowing about the policy stance of both candidates), care both about policy and ideology, while the uninformed voters know only the ideological position of the candidates (for

example, they know which party these candidates belong to), and vote only on the basis of their ideological preferences.

The distributions of the individual and aggregate shocks are:

$$\begin{aligned} \sigma^{iJ} &\sim U[-\frac{1}{2\phi^J}, \frac{1}{2\phi^J}] \\ \delta &\sim U[-\frac{1}{2\psi}, \frac{1}{2\psi}]. \end{aligned} \tag{23}$$

Thus, ϕ^J represents the density of the ideological preference distribution in region J, while ψ represents the density of the ideological preference distribution in the whole population. Regions with a higher ϕ^J are the ones with a *narrower* ideological preference distribution of voters.

The timing of the game is as follows: (1) both candidates simultaneously and non-cooperatively commit to policy vectors $\mathbf{g}_A, \mathbf{g}_B$; (2) voters decide on information acquisition, and the fraction of informed voters in each region is determined: $p^J = p(d^J)$, following the basic model (with $\frac{\partial p^J}{\partial d^J} < 0$); (3) Elections are held and the winning candidate implements her policy.

We assume, for simplicity, that the signals of salience are

$$\theta^{iJ} = \theta^J + \varepsilon^{iJ} \text{ with } \theta^J = \theta \text{ for all } J, \tag{24}$$

and that the individual perceptions of salience and ideological taste shocks are orthogonal to each other:

$$\varepsilon^{iJ} \perp \sigma^{iJ}. \tag{25}$$

3.3 Equilibrium

Uninformed voter i in region J votes for candidate A if

$$\sigma^{iJ} + \delta < 0 \tag{26}$$

(Alternatively we can assume that the uninformed voters do not vote at all - the results of the model do not change).

Informed voter i in region J votes for candidate A if

$$\sigma^{iJ} + \delta < W^J(\mathbf{g}_A) - W^J(\mathbf{g}_B). \tag{27}$$

The swing voter (i.e., the voter indifferent between voting for A or B) among the uninformed voters is the voter with the ideological preference:

$$\underline{\sigma}^J = -\delta, \tag{28}$$

while among the informed voters, it is the voter with the preference:

$$\overline{\sigma}^J = W^J(\mathbf{g}_A) - W^J(\mathbf{g}_B) - \delta. \tag{29}$$

Candidate A's votes among the uninformed voters in region J are:

$$V_A^{J,U} = \Pr[\sigma^{iJ} < \underline{\sigma}^J] = \frac{1}{2} - \delta\phi^J. \tag{30}$$

Similarly, A's votes among the informed voters in region J are:

$$V_A^{J,I} = \Pr[\sigma^{iJ} < \overline{\sigma}^J] = \frac{1}{2} - \delta\phi^J + \phi^J[W^J(\mathbf{g}_A) - W^J(\mathbf{g}_B)]. \tag{31}$$

Given that there are p^J fraction of informed voters in region J, candidate A's total votes in the region J are:

$$V_A^J = (1 - p^J)V_A^{J,U} + p_J V_A^{J,I}. \tag{32}$$

Given this, we can easily find candidate A's overall vote share:

$$\pi_A = \frac{1}{N}\sum_J V_A^J = \frac{1}{N}\sum_J \left\{\frac{1}{2} + \phi^J p^J[W^J(\mathbf{g}_A) - W^J(\mathbf{g}_B)] - \phi^J\delta\right\}. \tag{33}$$

We assume that the elections are decided by a simple majority rule, thus the candidate A's probability of winning is:

$$P_A = \Pr_\delta[\pi_A \geq \frac{1}{2}] = \frac{1}{2} + \frac{\psi}{\phi N}\sum_J \phi^J p^J[W^J(\mathbf{g}_A) - W^J(\mathbf{g}_B)]. \tag{34}$$

Candidate A's problem is to maximize the probability of winning:

$$\max_{\mathbf{g}_A} P_A(\mathbf{g}_A, \mathbf{g}_B). \tag{35}$$

Candidate B's problem is perfectly symmetric, therefore, in equilibrium, policy platforms converge:

$$\mathbf{g}_A^* = \mathbf{g}_B^*. \tag{36}$$

The first-order condition for the problem (35) is:

$$\phi^J p^J Z_g(g^J) = \frac{1}{N} \sum_I \phi^I p^I, \tag{37}$$

and the resulting equilibrium policy is:

$$\widehat{g}^J = Z_g^{-1} \left(\frac{\frac{1}{N} \sum_I \phi^I p^I}{\phi^J p^J} \right). \tag{38}$$

Note that $Z_g^{-1}(.)$ is a decreasing function.

How do we interpret the result (38)? Notice that $\phi^J p^J$ measures the region J's political "attractiveness" for the candidates. It consists of two parts. Regions with a higher density of ideological preference distribution, ϕ^J, are more attractive because voters in such regions on average are ideologically closer to the center, and thus more easily switch their votes in response to a more favorable policies. Regions with a higher fraction of informed citizens, p^J, have more voters that care about policies.

$\frac{1}{N} \sum_I \phi^I p^I$, instead, measures the average "attractiveness" of all the regions. Thus, a region with a higher attractiveness gets more local spending.

Thus, here we show the effect of social distance on economic policy through the channel of political information. The regions with a lower social distance between citizens have higher fraction of voters that are informed about politics. Such regions are more attractive from the candidates' point

of view, and in equilibrium, these regions get a higher share of public spending.

This application sheds some theoretical light on the chain "social capital → economic policies" studied empirically in the literature launched by Putnam (1993). We certainly do not claim that this is the only (or the main) channel. However, it seems to us a plausible one.

4 Empirical Strategy and Data

4.1 Identification Strategy

Our basic model predicts that citizens are more likely to acquire political information when the social distance between them is shorter. In the rest of the paper, we provide empirical evidence for this prediction.

Our identification assumption is as follows. We assume that people engage in social exchange in the neighborhood area where they live. Assume also that developing a social network requires time. Then, people who have recently moved (and, consequently, have not yet developed a social network) face a larger social distance and lower incentives to acquire political information than citizens who have lived in the area for longer. We thus also assume that the reasons for moving do not correlate negatively with the reasons to acquire political information (in the ways other than the one in our model). We discuss the specification problems arising form this identification strategy below and explain how we deal with them.

We assume that the benefit from information acquisition for a citizen i living in state j can be modeled as

$$U_{ij} = a_0' X_{ij} + a_1 M_{ij} + a_2' I_j + \varepsilon_{ij}, \tag{39}$$

where X_{ij} is the vector of individual characteristics (age, education, income,

marital status, and home-ownership), M_{ij} is the measure of social distance for citizen i, proxied with the length of residence, I_j is an indicator variable capturing unobserved state-level characteristics, and ε_{ij} is the error term distributed normally with mean 0 and variance V_j^2.

We do not observe the latent variable U_{ij}. Instead, we observe whether or not a citizen spends effort to acquire political information. This takes value 1 if U_{ij} is sufficiently high and 0 otherwise:

$$\begin{aligned} P_{ij} &= 1 \text{ if } U_{ij} > \overline{U}_{ij} \\ P_{ij} &= 0 \text{ if } U_{ij} \leq \overline{U}_{ij} \end{aligned} \tag{40}$$

There are three potential problems with our specification. First, both the social distance and the political information acquisition may be driven by some third individual-level political variable, such as political activeness. For instance, politically active citizens may tend to have a higher density of social interactions, as well as acquire more political information than politically inactive citizens. To resolve this problem, we add citizens' past political behavior (turnout in the previous presidential elections) into the matrix of controls X_{ij}.

Second and similarly, both the social distance and the political information acquisition may be driven by some third individual-level social-skill characteristic, such as skills in accumulating social capital. Citizens more skillful in building social capital may tend both to naturally face a shorter social distance and to acquire more political information. To account for this problem, we add individual social-activity characteristics (trust in other people, membership in organizations, and attendance of religious services) into the matrix of controls X_{ij}.

Finally, most US states require new movers to register anew before vot-

ing. Thus, a positive correlation between the intensity of social interactions and the effort in acquiring political information may be simply because new movers face an additional hurdle to voting, and thus tend to acquire less political information. This explanation does not involve any social network effects.

We try tackle this issue using the fact that seven out of 50 US states have voting-day registration or no registration requirement at all. In this states, new movers should face no additional voting hurdle than citizens living in the state for a longer time period. Furthermore, eight other states have a short deadline for registration (less than 16 days before the elections). In these states, the registration hurdle should be less important than in the states with the regular registration requirement. We thus estimate our model on two sub-samples: states with voting-day registration, no registration, or short-deadline registration, on one hand, and states with the regular registration rule, on the other. Thus, if the registration requirement indeed serves as an additional hurdle for political information acquisition, we should see that the gap in information acquisition between long-time residents and recent movers in states with voting-day, no registration or a short-deadline registration - we call these "easy registration states" - should be smaller than in the states with the regular registration procedure.

We estimate the Probit model (39)-(40) using individual-level and state-level data from the United States.

4.2 Data and Variables

The main source of data is the 2000 National Elections Study of the United States. It was conducted several weeks after the November 2000 presidential elections (some questions were asked before the elections). This survey

interviews 1807 individuals; however, as some data (in particular, on income and on city size) is missing, we concentrate our analysis on 726 observations.

The key features of the survey are detailed questions about political behavior of citizens and several social behavior questions, such as trust, membership in organizations, and the length of residence (in the community and in the current dwelling).

State-level institutional variables come from Besley and Case (2003) dataset and Federal Election Commission website. All variables are described in detail in the Appendix.

Our endogenous variables of interest are: the attention paid to 2000 electoral campaigns, the attention paid to the presidential election campaign news, and following at least one TV debate (in full) between the presidential candidates (Gore and Bush). These variables serve as measures of political information acquisition[5].

The first group of exogenous variables comprises individual demographic and socioeconomic characteristics. These are: age, education, income, gender, marital status, presence of children under 18 in the household, homeownership, and the city size.

The second group of regressors comprises the proxy for the key variable in the theoretical model (the social distance): the length of residence at a current address. We describe it with a set of dummy variables taking value 1 if the respondent has lived in her current home for x years, and 0 otherwise. x takes the following values: 0-1 years, 2-5 years, 6-9 years, and 10+ years.

[5] We concentrate on the variables that explicitly measure the effort to acquire political information. An alternative would be to use the political knowledge variables (such as the names of politicians or the policy positions of the candidates). However, well-known research in political science (see, for example, Lupia (1994)) shows that the relevance of such political knowledge measures is extremely limited, as voters often use shortcuts to decide on their votes.

Other variables in this group are the ones aimed to capture unobservable political and social-skill heterogeneity: turnout in 1996 presidential elections, trust in other people, membership in an organization, and the attendance of religious services.

The third group of regressors includes state-level variables, aimed at capturing state-level unobservables. These are: the measure of campaign visits of Gore and Bush to the state (that serves as a proxy for the closeness of the electoral race in the state; we use a measure from Stromberg (2002) paper) and a dummy for states with regular registration requirement (as opposed to easy registration states).

Table 1 presents the summary statistics for the key variables. A large fraction of the sample, 78%, responded that they paid at least some attention to the campaign. However, only 28% stated that they paid strong attention to the campaign. Similarly, 29% of the sample have declared that they have followed at least one TV debate between Gore and Bush in full. More people (43% of the sample) said that they read about the campaign in newspapers. 73% reported that they voted in the 2000 presidential elections[6].

25% of the sample lives in their current home for less than 2 years. The fraction of the sample that has lived in the current home for 2-5 years, 6-9 years, and 10+ years is 24%, 11%, and 40%, respectively.

5 Econometric Evidence

5.1 Basic Regressions

What does our testable hypothesis say about the expected signs of the coefficients in the econometric model? If the data are in line with our theoretical

[6] This figure is clearly higher than the national average (51.3%). This is the standard problem with the NES data set. See Burden (2000) for the discussion of the sources of this bias.

model, we should see that the length of residence should be positively correlated with paying attention to the campaign and following TV debates. In other words, we expect a positive and significant coefficient a_1.

If this correlation is not driven by the registration requirement, we should see that the gap in information acquisition between long-term residents and recent movers in the easy registration states is not significantly different from the gap in the other states.

Table 2 shows our basic probit regression using the NES dataset and including all the controls except the length of residence. The dependent variables are: paying strong attention to the presidential campaign (takes value 1 if the respondent said that she paid strong attention to the campaign, and 0 otherwise), paying attention to media news about the presidential campaign (takes value 1 if the respondent said that she paid attention to the media news about the presidential campaign, and 0 otherwise), and following at least one TV debate between Gore and Bush in full (takes value 1 if the respondent has followed at least one debate in full, and 0 otherwise). The regressors include the individual characteristics that, in our model, may affect the information cost, the benefit of social exchange, and the average salience.

The numbers in cells of Table 2 are the marginal probit coefficients calculated at the means. The numbers in brackets are standard errors corrected for heteroskedasticity. All the specifications include state fixed effects to control for state-level unobservables.

Elder people are more likely to pay strong attention to the campaign, at a decreasing rate. However, this attention does not go together with a higher likelihood of following a TV debate (the age effect is of opposite sign). This suggests that elder citizens pay more symbolic attention to the

electoral campaign, though they actively acquire less political information than younger citizens.

Not surprisingly, education and income are both correlated with political information acquisition. More educated people obviously face lower cost of learning about politics. Richer citizens may acquire more political information because political discussions are more salient among rich people than among poor ones.

Women acquire somewhat less information than men (this is robust to all the measures). We do not find that married people acquire more information than singles. This may mean that spending more discussion time with a spouse crowds out discussion time spent with friends or neighbors.

Social-skill measures positively correlates with information acquisition in most specifications. Though people who trust others more are not likely to acquire more political information, membership in organizations and attending religious services both are positively correlated with political information acquisition in most specifications. Note that although this finding goes in line with our model, we cannot interpret it as a credible support of our theory, because this correlation by itself cannot serve as a support for our model's prediction. This is because such correlation can be driven by an unobservable individual social-skill characteristic (for example, people who are more curious are more likely both to acquire political information and to be a member of an organization).

We include all these controls in all the further specifications. To economize on space, we do not report them in further tables.

Table 3 presents the main results of the estimation of our econometric model (39)-(40).

Our key independent variables are the dummies for the length of resi-

dence in the current home. These variables take value 1 if the respondent has lived 0-1 years (2-5 years, 6-9 years, 10+ years) in her current home, and 0 otherwise. The benchmark category is the length of residence less than 2 years[7]. We do not use simply the length of residence (continuous measure), since the relationship between the regressor and the dependent variable is likely to be highly non-linear.

All the coefficients on the length of residence dummies have the predicted sign and all are statistically significant in all the three specifications. A citizen that has lived in her current home at least for 2 years is significantly more likely to pay strong attention to campaigns, to pay attention to presidential campaign news, and to follow at least one full TV debate between Gore and Bush, than a resident for less than 2 years. For example, a citizen that has lived at the current address for 2-5 years is about 18% more likely to have followed a TV debate between Gore and Bush in full, than her counterpart with less than 2 years of residence. This is in line with our theory that predicts that citizens facing a shorter social distance are more likely to acquire political information.

5.2 Which levels and sources of information?

Does the social exchange channel work at all the levels and sources of information? To answer this question, we repeat our analysis using three alternative dependent variables. Table 4 presents the results. First, we use "following at least *a part* of the TV debate" instead of "following at least one TV debate *in full*". In this specification, the length of residence does

[7] One can argue that recent movers also face a higher opportunity cost of time, as getting oriented in a new place takes considerable energy. This is not a concern in our case, as very few respondents in the baseline category have resided at the current address for less than 6 month. It is unlikely that the orientation period at the new address lasts more than six months.

not significantly correlate with information acquisition. Similarly, we do not observe significant correlation between the length of residence and the political information acquisition as measured by reading about the campaign in the newspapers and only a weak correlation between the length of residence and listening to the radio transmissions about the campaign.

What do we learn from this? First, in terms of the level of political information, these results seem to suggest that most citizens possess some minimum degree of interest in elections, and the incentives to acquire information for social exchange purposes kick in at a more complex level of political information. For instance, whether the new President will be a Republican or a Democrat interests most citizens, and the social exchange plays no role in determining this interest. Instead, the social exchange motivation may play a role in inducing people to learn about the positions of the candidates with regards to particular policy issues. People enjoying a higher benefit from social exchange may decide to learn about such positions, while people with low benefit of social exchange (such as citizen with short length of residence) find spending time to get informed on these position too cumbersome.

Second, not all sources of political information are affected by the social exchange motivation. Social exchange matters a lot for type of information passed through TV debates, and does not seem to matter for the information passed through newspapers and only weakly for the information passed through the radio.

5.3 Sensitivity Analysis

Next, we perform two types of sensitivity analysis, to check for the robustness of our findings to the alternative ways of capturing the individual

unobservables. First, we use "understanding politics" as the dependent variable. As this measure is not specific to the 2000 election, this allows us to see whether the correlation that we find in our main regression is simply driven by the unobservable individual taste for politics in general. Second, we repeat our estimation with "strong attention to campaign" as the dependent variable, while excluding turnout in 1996 elections from the set of regressors. If turnout in 1996 captures only a part of the unobservable individual political heterogeneity, we should see that the coefficients on the length of residence are highly sensitive to the inclusion of past turnout. If this is true, the model might be mis-specified, because it accounts too little for the unobservable individual heterogeneity.

Table 5 presents the results of our sensitivity analysis. Column 1 shows the estimates when the dependent variable is "understanding politics" (measured on the scale from 0 to 4). The length of residence no longer correlates with the dependent variable. This suggests that the correlation in our main regression is linked to the 2000 election, and is not driven by the general interest in politics.

Columns 2 and 3 compare the specifications with and without past turnout. The coefficients on the length of residence are not sensitive to the inclusion of turnout in 1996 elections. This implies that our model captures the unobservable individual political heterogeneity relatively well, and thus does not suffer from mis-specification on this ground.

5.4 The Effect on Turnout

Another empirical question of interest is how much the social exchange channel - described in the model and found in the data - affects voter turnout. To answer this question, we use the respondent's turnout in 2000 elections as

the dependent variable. We compare two alternative specifications: with and without the measures of political information acquisition as regressors. This comparison will suggest how much of the social distance effect on turnout goes through the political information acquisition channel.

Table 6 presents the results of these regressions. The coefficients on the length of residence are positive and highly significant in both specifications. This suggests that social distance (as proxied with the length of residence) strongly affects turnout. Comparing the coefficients in the two specifications, we find that including our measures of political information acquisition somewhat reduces the effect of the residence on turnout. For example, in the first specification, an individual with less than 2 years of residence is about 10% less likely to have voted than her counterpart with 2-5 years of residence, while in the second specification this gap reduces to 7%. This means that a sizeable part of the effect of social distance on turnout goes through the information acquisition channel, although most of the effect goes through some other channel (for example, social norms).

5.5 Confronting with the Pivotal-Voter Model

We next empirically confront our model with the pivotal-voter model. Pivotal-voter model predicts that voters are more likely to acquire information if the probability of being pivotal is larger. Thus, voters should acquire more information in states with less inhabitants and in states with a higher expected closeness of the electoral race.

We thus add the state population (in millions) and the intensity of campaign visits to a state by Gore and Bush. The latter variable comes from Stromberg (2002), and serves as a proxy for the expected closeness of the race: candidates pay more campaign attention to "swing" states.

Table 7 presents our findings. We see both variables have small coefficients, and the sign is ambiguous. Instead, the length of residence remains significant, and the size of coefficients on the length of residence does not decline overall. We thus conclude that our model describes information acquisition much better than the standard pivotal-voter model.

5.6 Information Acquisition and Registration Requirement

All the empirical findings above face the following critique. Electoral system in the US requires that in all the states (except North Dakota), voters must register until several weeks before elections. In most states, the deadline for registration closes about 30 days before the election day. Thus, the new residents (i.e., recent movers) face an additional cost to voting: they have to register anew, even if they have already registered at their old address. Therefore, some of the new movers may get discouraged from voting by this additional hurdle. If voting is purely instrumental, they also get discouraged from acquiring political information. We then observe the correlation found above, even without any social exchange motive.

To control for this possibility, we use the fact that six states (Maine, Minnesota, Wisconsin, Wyoming, New Hampshire, and Idaho) allow registration on the election day, and North Dakota does not require registration at all.

Similarly, eight other states (Alabama, California, Connecticut, Iowa, Kansas, South Dakota, Vermont, and Washington) close the registration less than 16 days before the election day.

If registration indeed acts as a disincentive to political information acquisition, we should see that the residence gap in information acquisition should be smaller in the easy-registration states and short-deadline registra-

tion states than in the states with the usual registration procedure.

We split the sample into two parts: citizens living in the easy registration and short-deadline registration states, and those living in the states with the usual registration.

Table 8 presents the results of our estimation for the two sub-samples. We see that, contrary to the expectation, the information acquisition gap between long-term residents and recent movers is bigger in the first sub-sample. This suggests that the registration requirement does not serve as a disincentive for political information acquisition. Instead, this result can be driven by the possibility that in the easy-registration states, the salience of the elections for voters may be higher than in regular-registration states.

6 Conclusion

This paper builds a theory of political information acquisition based on social exchange. We build our model on the assumption that informed citizens enjoy discussing politics with other informed citizens. We find that information acquisition depends on three parameters: the social distance between citizens, the average salience of elections, and the information cost. We find that in communities with a shorter social distance, citizens are more likely to get informed about politics.

We also present an application of this basic insight to the model of distributive politics, where a central government allocates local public spending among the regions that differ in the degree of social distance. We find that the regions with shorter social distance among citizens - thus having a larger fraction of informed citizens - receive more generous transfers from the center.

We provide evidence for the key prediction of the basic model on the

data from the 2000 National Elections Study of the Unites States. The data are in line with our basic model. Political information acquisition - in the form of paying attention to the electoral campaign and following TV debates - strongly positively correlates with the length of residence. We show that this relation is robust to many alternative specifications and that one cannot attribute it to the registration requirement that usually affects recent movers.

We also compare the performance of our model with respect to the standard pivotal-voter model of information acquisition. Our model preforms better than the pivotal-voter model: size of state population and closeness of the electoral race do not correlate with information acquisition, while the regression coefficient on the length of residence remains significant.

In the light of the pension reform research mentioned in the introduction, our findings suggest that the countries with the lower social distance between citizens will more likely conduct successful pension reforms. The preliminary evidence from the Scandinavian countries - known for a low degree of heterogeneity and lower social distance in the society - seems to support our tentative suggestion.

In the light of understanding voter turnout, our paper suggests a totally different view with respect to the traditional pivotal-voter framework. In that framework, an increase in individual participation carries a negative externality towards other voters, as it increases the fraction of effective voters and thus reduces - for everybody else - the probability of being pivotal. Thus, this literature views turnout as a competition between voters for having the opportunity to draw the decisive vote. Such paradigm seems an overly negative and unrealistic view of democracy. Instead, our paper proposes a more co-operative and, in our opinion, more realistic view of democracy:

higher individual political information acquisition (and consequently, higher probability of voting) is good, as it increases the opportunity for everybody else to engage in fruitful political discussions.

The general insight from our analysis is that taking into account the citizens' payoffs from social exchange opens a promising avenue into understanding the deep determinants of economic policies - and crucially, it is an avenue in an empirical direction. These deep determinants affect the degree of effective involvement of citizens in politics and go beyond political institutions.

Also, the strategic complementarity in action is not the feature unique to voter information acquisition. Our approach of linking social neighborhood characteristics and individual actions can be applied to other forms of political participation, such as strikes, citizen protests, and lobbies.

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Appendix. Data and Variables

The following is the list of variables that we use in the empirical part of the paper. All individual-level variables come from the 2000 National Elections Study of the United States. State-level institutional variables come from Besley and Case (2003) and the Federal Election Commission website (http://www.fec.gov/votregis/ state_voter_reg_deadlines02.htm).

Attention to the campaign. Survey question: "Some people don't pay much attention to political campaigns. Would you say that you have been very much interested, somewhat interested or not much interested in the political campaigns so far this year?" 0 = "not much interested", 1 = "somewhat interested" or "very much interested".

Strong attention to the campaign. Same question as above. 0 = "not much interested" or "somewhat interested", 1 = "very much interested".

Attention to the presidential campaign news. Survey question: "How much attention did you pay to news about the presidential election campaign?" 0 = "none" or "not much", 1 = "much" and "very much".

Following a TV debate between Gore and Bush. Survey question: "Did you watch a televised presidential debate between Al Gore and George W. Bush?" 0 = no, 1 = yes.

Following at least one TV debate in full. Survey question: "Did you watch a debate between Gore and Bush, in full?" 0 = no (includes watch no debate and watch debate in part), 1 = yes.

Reading about the campaign in newspapers. Survey question: "Did you read about the presidential campaign in any newspaper?" 0 = no, 1 = yes.

Listening to radio news about campaign. Survey question: "There are a number of programs on radio in which people call in to voice their opinions about politics. Do you ever listen to political talk radio programs of this type?" 0 = no, 1 = yes.

Understanding politics. Survey question: "'I feel that I have a pretty good understanding of the important political issues facing our country.' Do you agree strongly, agree somewhat, neither agree nor disagree, disagree somewhat, or disagree strongly with this statement?" 0 = disagree strongly, 4 = agree strongly.

Turnout in the 2000 presidential elections. Survey question: "Did you vote for President in 2000 November elections?" 0 = no, 1 = yes.

Turnout in the 1996 presidential elections. Survey question: "In 1996 Bill Clinton ran on the Democratic ticket against Bob Dole for the Republicans, and Ross Perot as an independent candidate. Do you remember for sure whether or not you voted in that election?" 0 = "no, didn't vote", 1 = "yes, voted".

Age. Respondent's age

Education. Respondent's education category (from 1 to 7).

Household income. Respondent's household income category (from 1 to 22).

Gender. Respondent's gender, 0 = male, 1 = female.

Marital status. Respondent's marital status, 0 = not married, 1 = married or living as married.

Children under 18 in the household. 0 if there are no children under 18 living in the household, 1 otherwise.

Household owns the dwelling. A dummy denoting whether the resident's household owns the housing it lives in or not. 0 = no, 1 = yes.

Residence in the current home. Respondent's length of residence in the current home, in years.

Residence in the current home 0-1 years. 1 if residence in the current home is 0 or 1 years, 0 otherwise.

Residence in the current home 2-5 years. 1 if residence in the current home is 2-5 years, 0 otherwise.

Residence in the current home 6-9 years. 1 if residence in the current home is 6-9 years, 0 otherwise.

Residence in the current home 10+ years. 1 if residence in the current home is 10+ years, 0 otherwise.

City size. 1 if the resident lives in a city (including suburbs) with more than 2,000,000 inhabitants, 0 otherwise.

Trust in other people. Survey question: "Would you say that most people can be trusted, or that you can't be too careful in dealing with people?" 0 = "you can't be too careful with people", 1 = "most people can be trusted".

Membership in organizations. Survey question: "Are currently a member of any organization?" 0 = no, 1 = yes.

Attending a religious service. 1 if the respondent attends a religious service every weak or almost every weak, 0 otherwise.

State. State identifier using the ICSPR codification.

State with regular registration. A dummy denoting whether the resident lives in the state other than one with voting-day registration (Idaho, Maine, Minnesota, New Hampshire, Wisconsin, and Wyoming), no registration (North Dakota) or that has registration deadline closing less than 16 days before the election day (Alabama, California, Connecticut, Iowa, Kansas, South Dakota, Vermont, Washington), 0 = no, 1 = yes.

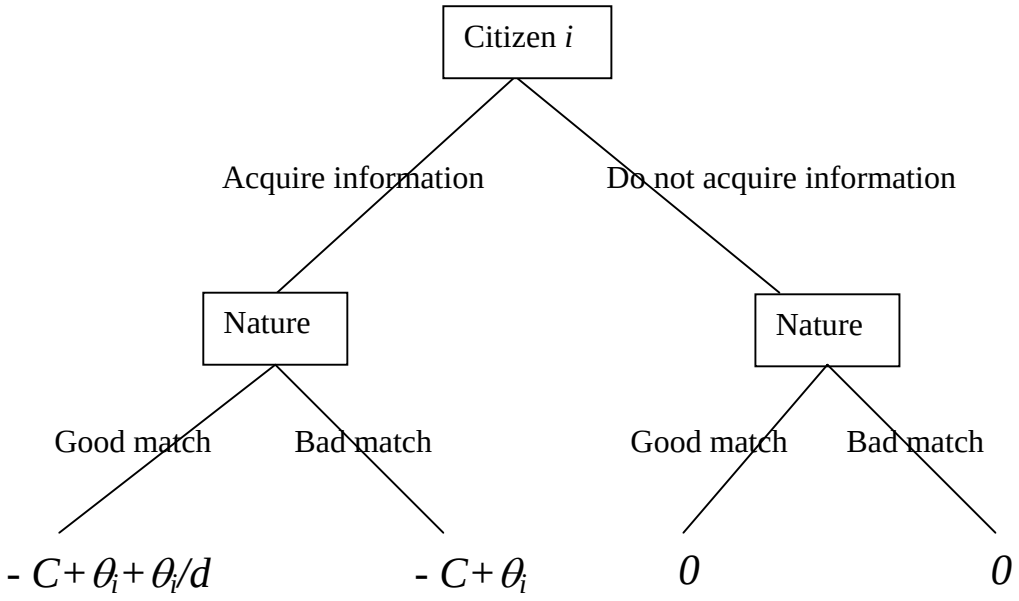

Figure 1. Social exchange

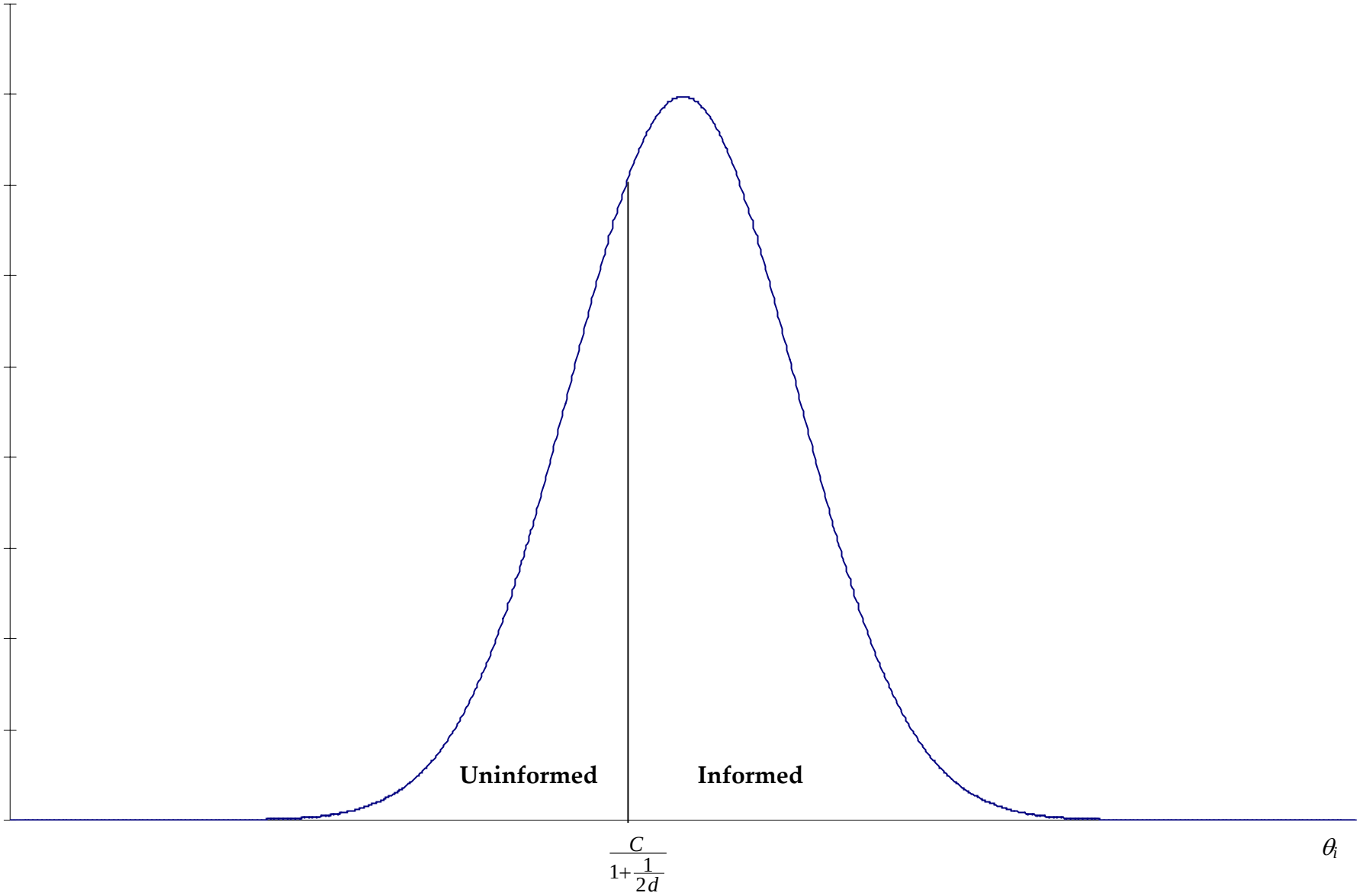

Figure 2. Equilibrium Strategy

Table 1. Summary statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Political Behavior Variables					
Some attention to the 2000 election campaigns	726	0.78	0.41	0	1
Strong attention to the campaigns	726	0.28	0.49	0	1
Attention to news about the presidential election campaign	726	0.47	0.5	0	1
Following a TV debate between Gore and Bush (at least in part)	726	0.67	0.47	0	1
Following at least one TV debate in full	726	0.29	0.45	0	1
Reading about the campaign in a newspaper	726	0.43	0.49	0	1
Listening to the radio news about the campaign	726	0.39	0.49	0	1
Understanding politics	723	2.55	1.1	0	4
Turnout in the 2000 presidential elections	726	0.73	0.45	0	1
Turnout in 1996 presidential elections	726	0.71	0.46	0	1
Individual Socio-Economic Characteristics					
Age of the respondent	726	47	17	18	93
Education (in categories) of the respondent	726	4.26	1.62	1	7
Household income (in categories)	726	6.80	3.74	1	22
Marital status of the respondent	726	0.52	0.50	0	1
Presence of children aged under 18 living in the household	726	0.35	0.48	0	1
Gender of the respondent	726	0.54	0.50	0	1
The household owns the house it lives in	726	0.64	0.48	0	1
Cize of the city is larger than 2 million inhabitants	726	0.49	0.50	0	1
Social Behavior Variables					
Trust in other people	726	0.50	0.50	0	1
Membership in an organization	726	0.42	0.49	0	1
Attending a religious service once a week or almost once a week	726	0.36	0.48	0	1
Residence Variables					
Residence in the current home 0-1 years	726	0.25	0.43	0	1
Residence in the current home 2-5 years	726	0.24	0.43	0	1
Residence in the current home 6-9 years	726	0.11	0.31	0	1
Residence in the current home 10 years or more	726	0.40	0.49	0	1
Aggregate variables					
State population (in millions)	721	11.77	9.96	1.24	33.87
Campaign visits to the state by Gore and Bush	721	1.89	1.87	0	5
State with easy registration	726	0.35	0.48	0	1
State with regular registration	726	0.65	0.48	0	1

Table 2. Basic determinants of information acquisition

	Strong attention to campaigns this year	Attention to news about pres. camp.	Followed a presidential TV debate in full
Age	0.017 (0.007)**	-0.004 (0.007)	-0.020 (0.006)***
Age squared / 1000	-0.086 (0.063)	0.074 (0.069)	0.230 (0.060)***
Education - category 2	0.100 (0.153)	0.012 (0.126)	0.153 (0.141)
Education - category 3	0.198 (0.125)*	0.008 (0.110)	0.141 (0.111)
Education - category 4	0.377 (0.134)***	0.071 (0.115)	0.229 (0.125)*
Education - category 5	0.309 (0.149)**	0.124 (0.122)	0.213 (0.133)*
Education - category 6	0.449 (0.133)***	0.111 (0.120)	0.213 (0.129)*
Education - category 7	0.419 (0.149)***	0.090 (0.131)	0.295 (0.142)**
Household income	0.011 (0.006)*	0.016 (0.007)**	0.014 (0.006)**
Gender	-0.067 (0.035)*	-0.137 (0.040)***	-0.081 (0.035)**
Marital status	-0.018 (0.041)	0.048 (0.047)	0.003 (0.040)
Kids under 18 in household	-0.037 (0.041)	-0.046 (0.048)	0.015 (0.042)
Household owns the dwelling	-0.079 (0.044)**	-0.045 (0.049)	0.016 (0.043)
Lives in the city with > 2 mln.	0.708 (0.041)*	0.037 (0.051)	-0.029 (0.044)
Trust in other people	-0.031 (0.037)	0.011 (0.044)	0.030 (0.037)
Membership in an organization	0.054 (0.037)	0.094 (0.043)**	0.020 (0.037)
Attending religious services	0.068 (0.037)*	0.072 (0.043)*	0.124 (0.039)***
Voted in 1996	0.066 (0.043)	0.160 (0.049)***	0.188 (0.038)***
State fixed effects	Yes	Yes	Yes
No. obs.	708	724	723
Pseudo R2	0.18	0.12	0.15
Observed P	0.29	0.48	0.29
Predicted P	0.24	0.47	0.25

* denotes significance at the 10 percent level, ** at the 5 percent level, *** at the 1 percent level.

Marginal probit coefficients are calculated at the means. In parentheses are standard errors corrected for heteroskedasticity.

Table 3. Length of residence and political information acquisition

	Strong attention to campaign	Attention to pres. camp. news	Following a TV debate in full
Has R lived in her current home for 2-5 years?	**0.121 (0.058)****	**0.141 (0.059)****	**0.178 (0.063)*****
Has R lived in her current home for 6-9 years?	**0.202 (0.082)*****	**0.176 (0.073)****	**0.191 (0.081)****
Has R lived in her current home for 10+ years?	**0.125 (0.060)****	**0.127 (0.066)***	**0.126 (0.063)****
Controls	Yes	Yes	Yes
No. obs.	708	724	723
Pseudo R2	0.19	0.12	0.16
Observed P	0.29	0.48	0.29
Predicted P	0.24	0.46	0.25

* denotes significance at the 10 percent level, ** at the 5 percent level, *** at the 1 percent level. Marginal probit coefficients are calculated at the means.

In parentheses are standard errors corrected for heteroskedasticity. Controls mean all the regressors in Table 2 and state fixed effects.

Table 4. Levels and sources of information

	Following a part of a TV debate	Reading about campaign	Listening to the radio about campaign
Has R lived in her current home for 2-5 years?	**0.011 (0.055)**	**0.006 (0.061)**	**0.069 (0.060)**
Has R lived in her current home for 6-9 years?	**-0.014 (0.073)**	**0.076 (0.079)**	**0.147 (0.078)***
Has R lived in her current home for 10+ years?	**-0.015 (0.063)**	**0.089 (0.067)**	**-0.030 (0.066)**
Controls	Yes	Yes	Yes
No. obs.	724	724	723
Pseudo R2	0.13	0.19	0.14
Observed P	0.67	0.43	0.39
Predicted P	0.69	0.41	0.37

* denotes significance at the 10 percent level, ** at the 5 percent level, *** at the 1 percent level. Marginal probit coefficients are calculated at the means.

In parentheses are standard errors corrected for heteroskedasticity. Controls mean all the regressors in Table 2 and state fixed effects.

Table 5. Sensitivity analysis

	Understanding politics	Strong attention to campaign	Strong attention to campaign
Has R lived in her current home for 2-5 years?	**-0.002 (0.131)**	**0.121 (0.058)****	**0.126 (0.058)****
Has R lived in her current home for 6-9 years?	**0.207 (0.174)**	**0.202 (0.082)*****	**0.200 (0.082)*****
Has R lived in her current home for 10+ years?	**-0.041 (0.138)**	**0.125 (0.060)****	**0.122 (0.060)****
Past turnout included	Yes	Yes	No
Controls	Yes	Yes	Yes
No. obs.	724	708	708
Pseudo R2	0.08	0.19	0.12

* denotes significance at the 10 percent level, ** at the 5 percent level, *** at the 1 percent level. Marginal probit coefficients are calculated at the means.

In parentheses are standard errors corrected for heteroskedasticity. Controls mean all the regressors in Table 2 and state fixed effects (past turnout dropped in column 3)

Table 6. The effect on turnout

	Voted in 2000 elections	Voted in 2000 elections
Has R lived in her current home for 2-5 years?	**0.104 (0.039)****	**0.070 (0.041)**
Has R lived in her current home for 6-9 years?	**0.181 (0.026)*****	**0.158 (0.025)*****
Has R lived in her current home for 10+ years?	**0.139 (0.047)*****	**0.110 (0.045)****
Strong att. to campaign		0.041 (0.041
Attention to pres. camp. news		0.131 (0.037)***
Following a TV debate in full		0.050 (0.049)
Controls	Yes	Yes
No. obs.	715	714
Pseudo R2	0.43	0.46
Observed P	0.72	0.72
Predicted P	0.82	0.84

* denotes significance at the 10 percent level, ** at the 5 percent level, *** at the 1 percent level. Marginal probit coefficients are calculated at the means.

In parentheses are standard errors corrected for heteroskedasticity. Controls mean all the regressors in Table 2 and state fixed effects.

Table 7. Confronting with the pivotal voter model

	Strong att. to campaign	**Following a TV debate in full**
Campaign visits to the state	**-0.007 (0.010)**	**-0.001 (0.010)**
State population (in millions)	**-0.003 (0.002)***	**0.003 (0.002)***
Has R lived in her current home for 2-5 years?	0.125 (0.057)**	0.163 (0.060)***
Has R lived in her current home for 6-9 years?	0.163 (0.079)**	0.177 (0.079)**
Has R lived in her current home for 10+ years?	0.108 (0.056)**	0.095 (0.059)
Controls	Yes	Yes
State fixed effects	No	No
No. obs.	722	721
Pseudo R2	0.14	0.14
Observed P	0.28	0.29
Predicted P	0.24	0.25

* denotes significance at the 10 percent level, ** at the 5 percent level, *** at the 1 percent level. Marginal probit coefficients are calculated at the means.

In parentheses are standard errors corrected for heteroskedasticity. Controls mean all the regressors in Table 2 and state fixed effects.

Table 8. Registration requirement

	Strong attention to campaign	**Strong attention to campaign**
	(regular registration states)	(easy registration states)
Has R lived in her current home for 2-5 years?	0.128 (0.070)*	0.185 (0.118)*
Has R lived in her current home for 6-9 years?	0.177 (0.106)*	0.248 (0.135)**
Has R lived in her current home for 10+ years?	0.127 (0.077)*	0.114 (0.101)
Controls	Yes	Yes
No. obs.	452	256
Pseudo R2	0.21	0.25
Observed P	0.28	0.30
Predicted P	0.22	0.22

* denotes significance at the 10 percent level, ** at the 5 percent level, *** at the 1 percent level. Marginal probit coefficients are calculated at the means.

In parentheses are standard errors corrected for heteroskedasticity. Controls mean all the regressors in Table 2 and state fixed effects.