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Sobbrio, Francesco and Navarra, Pietro
IMT Institute For Advanced Studies, Lucca

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Francesco Sobbrio† and Pietro Navarra‡

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Abstract

This paper provides an empirical investigation of electoral participation and communicative voting in 14 European countries. We estimate a multi-level voting process where individuals face a participation decision (whether to vote or abstain) and a voting decision (whether to vote strategically for a likely winner party or *as communicating* for a sure loser party). Our main findings can be summarized as follows. First, individuals who are either independent *or* uninformed are less likely to turnout. However, being both independent *and* uninformed does not have any statistically significant effect on electoral participation. Thus, our results question the empirical relevance of the *swing voter's curse* theory in large elections. Second, the probability of voting *as communicating* is positively related with the level of education and the degree of dissatisfaction with the political system. Finally, political preferences and institutional features characterizing the functioning of the political system and of the media market have a significant effect both on electoral participation and on the voting decision.

JEL Classification: D72, C25

Key Words: Electoral turnout, *Swing Voter's Curse*, Communicative voting, Strategic voting, Multi-level qualitative choices

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†Corresponding author: Francesco Sobbrio, Department of Economics, IMT Lucca Institute for Advanced Studies, Piazza San Ponziano 6, 55100 Lucca, Italy. Email: f.sobbrio@imtlucca.it

‡University of Messina, Italy and CPNSS, London School of Economics, United Kingdom

1 Introduction

Elections are generally viewed as choice mechanisms in which voters are involved in a decision process structured into two stages: they firstly decide whether to participate in the election (*participation decision*) and, secondly, they choose whom to cast their vote for (*voting decision*). In line with other studies (Deacon and Shapiro, 1975, Kahn and Matsusaka, 1997, Degan and Merlo, 2007), we construct a unified empirical framework in which both the participation decision and the voting decision are taken into account. We then employ this framework to empirically investigate the recent theoretical literature concerning the role of information on voter turnout (Matsusaka, 1995, Feddersen and Pesendorfer, 1996, 1999) and the trade-off between strategic and communicative motives for voting (Piketty, 2000, Castanheira, 2003, Razin, 2003).

To clarify our terminology, while most of the voting literature uses the term "strategic voting" to indicate the vote for a party different from the one most preferred by the voter (e.g., McKelvey and Ordeshook, 1972), in the present paper we will use the terms "strategic voting" and "communicative voting" *'a la Piketty*:

> "Voters trade-off two different motives when deciding how to vote: they care about current decision-making (they are "strategic"), but they also care about communicating their views about their most-preferred candidate so as to influence future elections, by influencing other voters' opinion and/or party positioning" (Piketty, 2000, pg. 169).

We will thus refer to "strategic voting" as the vote for a likely winner party (indicating that a voter cares more about current-decision making) and will instead refer to "communicative voting" as the vote for a sure loser party (indicating that a voter cares more about future elections).

We model elections as a multi-level choice mechanism in which voters decide both whether to vote and whom to vote for. We collect data from 14 European countries and then employ several econometric techniques to test the validity of the empirical structure underlying the electoral decision process that we propose. Specifically, we estimate multinomial logit, sequential logit and nested logit models and compare the relative appropriateness of each of them to deal with the research questions of this study.

We evaluate how individual characteristics, the level of information, and expressive motivations influence electoral participation. Further, given that people trade-off strategic and communicative motivations in the voting decision, we analyze the individual characteristics that make a voter more likely to care greatly about the strategic part of this trade-off or, alternatively, about the communicative role of voting. At the same time, we explore how institutional features, such as those defining the working of the political

system and the characteristics of the media market, influence the participation and the voting decision.

The evidence emerging from individual-level data regarding the role that information plays on electoral participation calls into question the empirical relevance of the *swing voter's curse theory* of abstentionism in large elections (Feddersen and Pesendorfer, 1996, 1999). Individuals who are either independent *or* uninformed are less likely to turn out. However, being independent *and* uninformed at the same time does not seem to have any statistically significant effect on the turnout decision.

The evidence emerging from cross-country data on electoral participation and communicative voting shows that a lower level of media freedom, a higher threshold for political representation, and a lower number of representatives for a given size of the electoral district are all features leading to a lower turnout probability. On the other hand, lower media freedom and a lower concentration of opposition parties is associated with a higher probability of individuals voting *as communicating*.

Individual preferences affect both electoral participation and voting decisions. Individuals whose ideologically-closer party is a likely winner, as well as those who consider politics important and those who have a good opinion of the political system of their country, are more likely to turn out and are also more likely to vote for a likely winner party.

On the other hand, left-wing extremists are more likely to vote for their most preferred party regardless of whether this party is a sure loser. In contrast, right-wing extremists are very strategic (even more strategic than moderate voters). Moreover, our results also show that better-educated people are more likely to vote *as communicating*, rather than strategically. This evidence seems to suggest that communicative voting indeed reflects forward-looking behavior.

Finally, individual preferences play a role in how institutional characteristics affect electoral participation and communicative voting. The features of the electoral system and the structure of the media market of a country have different effects on the behavior of different individuals. When focusing on the subsample of individuals whose ideologically-closer party is a likely winner, we observe that a higher level of media concentration leads to a higher level of electoral participation and a lower probability of voting *as communicating*. On the other hand, when we analyze the subsample of individuals whose ideologically-closer party is a sure loser, we observe that a lower level of media freedom and a lower level of concentration of opposition parties decreases the probability of electoral participation and increases the probability of communicative voting.

1.1 Related Literature

Our study is related to two different strands of literature. The first is the theoretical and empirical literature on voter turnout and, more specifically, on the effect of information on electoral participation. Participation in mass elections is a typical collective action problem: in large elections, the probability that a voter will cast a decisive ballot is not significantly different from zero. A vast literature has emerged trying to explain why people still decide to turn out.[1] The most recent theories on the determinants of electoral participation have focused on the role of information, both in a decision-theoretic (Matsusaka, 1995) and in a game-theoretic framework (Feddersen and Pesendorfer, 1996 and 1999). The decision-theoretic approach predicts that, since the more confident a voter is about voting for the best candidate, the higher is her expected benefit from voting, more informed voters are more likely to turn out (Matsusaka, 1995). On the other hand, by endogenizing the individual probability of being pivotal, Feddersen and Pesendorfer (1996) show that politically independent and uninformed voters suffer from the *swing voter's curse*, i.e., they are better off by abstaining than by voting for any of the competing candidates even when the cost of voting is zero. Specifically, in the presence of costless voting, both independent informed and partisan voters have a dominant strategy of turning out to the polls. In contrast, uninformed independent voters "vote to compensate for the [presence of] partisans and having achieved that compensation they abstain" (Feddersen and Pesendorfer, 1996, pg. 414). The *swing voter's curse* theory implies that, *ceteris paribus*, uninformed independent voters are less likely to turn out than informed independent and partisan voters.[2]

Recent empirical studies on electoral participation have focused on the relationships between information and turnout. Lassen (2005) uses data from a natural experiment where a random fraction of the electorate is exogenously informed and finds that better-informed voters are more inclined to vote in a referendum setting. Degan and Merlo (2007) show that, since uninformed voters are more uncertain about the optimal candidate, their expected regret from voting is higher and therefore they are less likely to turn out. While analyzing the role of information on the individual decision to turn out, however this literature has not taken into consideration the role of political preferences. The evidence regarding the positive correlation between information and turnout can thus be explained by both decision-theoretic and game-theoretic models. There are two exceptions. Larcinese (2009) analyzes the effect of information and ideological strength

[1] See Dhillon and Peralta (2002) and Feddersen (2004) for extensive surveys on the theoretical literature on voters' turnout.

[2] Feddersen and Pesendorfer (1999) generalize this model to allow for a continuum of voters' preferences and a "fine" state space. They show that in such case the level of abstention should be closer to zero. Nevertheless, in presence of a more realistic "coarse" state space "the more general model can produce the same comparative statics as in the 1996 paper" (Feddersen, 2004, pg 105).

on voter turnout. In line with our results, he finds that being informed and at the same time having more extreme preferences does not have any significative effect on the voter's probability of turning out. Since he excludes independent voters from his analysis, however, it does not constitute an appropriate test of the *swing voter's curse* theory. Moreover, Larcinese focuses only on Britain, while we provide a test of the *swing voter's curse* both within and across different countries and different electoral systems. The only study that has so far tried to directly test the *swing voter's curse* is the experimental work by Battaglini et al. (2009). The evidence emerging in this context favors the game-theoretic approach on the effect of information on turnout. The authors show that individuals that are independent and uninformed strategically abstain and that they take into account the presence of partisan bias in their decision to turn out. Our study represents the first empirical analysis aimed at directly testing the *swing voter's curse* theory using field data both on the level of information and on the political preferences of individuals. While the results of Battaglini et al. (2009) seem to suggest that individuals do take into account their probability of being pivotal in the presence of a small number of voters (e.g., in a committee), the results of our empirical analysis are more in line with the predictions of decision-theoretic models of electoral participation.[3] Hence, our results seem to question the empirical relevance of the *swing voter's curse* theory in large elections.

The second strand of literature that our paper relates to is the theoretical and empirical literature on communicative voting. Once an individual has decided to participate in the election, she has to choose whom to cast her vote for. If voters care only about current decision-making, sure loser parties should not receive any votes in equilibrium. This intuitive result seems to conflict with simple empirical observation: sure loser parties and candidates have been able to reach significant vote shares even in first-past-the-post systems such as those present in the US and in the UK. These considerations have lead several scholars to depart from traditional voting models, where voters are always strategic, to analyze the role of voting as a way to convey information to other voters and parties. The key idea of this literature is that, even if in a one-period election we should only observe strategic voting (i.e., individuals only casting their votes for parties with a positive probability of winning), broadening the time span of the voter's objective function may lead to different results. While Piketty (2000) explores the way communicative voting influences other voters, Castanheira (2003) proposes a model where rational individuals may vote for sure loser parties in order to influence the platforms of main parties.[4] In a

[3] For a parallel result, see also Coate et al. (2009) on the performance of pivotal-voter models in small scale elections.

[4] In the same vein, Razin (2003) points out that voters signal their private information by voting. In this perspective, a winning candidate responds to the information elicited by the vote signal by recrafting her policies and therefore by positioning more effectively in the next campaign.

multi-period model, both extremist voters and core voters may want to vote for extremist parties in order to alter the beliefs of main parties and therefore their future platforms. Core voters may be tempted to mimic extremist voters the closer the platforms proposed by the main parties are.[5]

Franklin, Niemi and Whitten (1992) provide an empirical analysis of instrumental tactical voting and expressive tactical voting, where the former indicates strategic voting by individuals whose most-preferred party has no chance of winning and the latter represents communicative voting by individuals casting their vote for a loser party different from their preferred focal party. By analyzing individual data on the 1987 British election, they find that instrumental tactical voting is positively related with the margin of victory of the two main parties, while expressive tactical voting shows a negative relationship. Expressive tactical voting is also positively related with being indifferent among which of the main parties would win, and with the level of education. Both kinds of tactical voting appear to be positively related with the strength of partisanship. Degan and Merlo (2007) model the behavior of voters in a two-stage optimization problem. In the first stage, the voter chooses whether to participate in the election. In the second stage, conditional on participating, the voter decides whom to cast her vote for. The focus of the analysis is on split-ticket voting, where individuals vote for different parties/candidates in different elections (i.e., a Republican candidate in presidential elections and a Democrat candidate in congressional elections and *vice-versa*) to evaluate the extent to which sincere voting affects the electoral choice of voters. Their work brings about several interesting results relevant for our study. First, only a small fraction of split-ticket voting (about 20% on average in the elections investigated) can be explained by sincere voting, since other considerations, such as the desire to balance the government (Fiorina, 1990, Alesina and Rosenthal, 1996), may also play a significant role in inducing voters to split their ticket. Second, independent voters split their ticket more than partisan voters. Third, uninformed voters split their ticket more than informed voters. Fourth, the distribution of the fraction of split-ticket voters on the liberal-conservative ideological space reveals that sincere split-ticket voters account for those voters displaying more moderate positions.

Our paper contributes to this literature by analyzing the determinants of communicative voting both within and across different countries and different electoral systems. Hence, we provide an empirical investigation of the individual and institutional characteristics behind the individual decision to vote *as communicating*.

The paper is organized as follows. Section 2 describes the electoral decision process. Section 3 presents the data. Section 4 presents our empirical strategy and discusses the empirical results. Section 5 concludes.

[5] Castanheira (2003) argues that this may explain why some of the voters of extremist parties may not be real extremists but rather use this instrument to warn main parties, in other words, they use communicative voting (they would probably stop voting for extremists if they become too important).

2 The Electoral Decision Process

We propose two alternative specifications of the electoral decision process faced by the individual. The first is a two-stage decision process where the individual makes a participation and a voting decision. The second is characterized by a three-stage structure where, prior to making the above two electoral decisions, the individual takes into account the fact that her preferred party is either a likely winner or a sure loser.

The two-stage electoral choice mechanism is described by Figure 1. In the first stage, the individual decides whether to participate in the political process or to abstain. In the second stage, conditional on having decided to participate, the voter chooses whom to vote for. The voter may either vote *as communicating* for a sure loser party, or strategically for a likely winner party.

[Figure 1 about here]

The three-stage electoral choice mechanism takes into account the fact that individuals face different choice sets depending on whether their preferred party is a potential winner or a sure loser. Figure 2 illustrates the voter's decision process embedding the *ex-ante* distinction in the choice sets that different individuals face.[6]

[Figure 2 about here]

In the first stage the individual, given her political bliss point, observes the "shelves of political offer" and determines her choice set. In other words, she realizes whether the party whose platform is closer to her preferred policy is a likely winner party. We define as *"closer to a sure loser party" (CSLP)* those individuals whose most preferred party is a sure loser. Instead, individuals whose preferred party is a potential winner are defined as *"closer to a likely winner party" (CLWP)*. In the second stage, given her choice set, the individual decides whether to participate in the political process or abstain. Finally, in the third stage, conditional on having decided to participate, the voter decides whom to cast her vote for. Put differently, in the third stage the voter chooses whether to vote strategically (i.e., vote for a likely winner party) or *as communicating* (i.e., vote for a sure loser party). The three-stage decision process is thus characterized by a first stage that represents an exogenous constraint, since the individual does not actually make any choice. Assuming that the voter is endowed with a given political bliss point and that she cannot influence the loser-winner distribution of parties in a given country at a given time, we can think *as if* the choice set of each voter was chosen by nature.

[6] It may appear odd that an individual ideologically closer to a likely winner party votes for a sure loser one. However as shown by Casthaneira (2003), moderate voters may find sometimes optimal to mimic extremist ones (for example because the party platform is moving far away with respect to the individual preferred policy).

Therefore, the three-choice decision process allows us to analyze separately the electoral behavior of the two subsamples of *CSLP* and *CLWP* voters, in order to consider the different incentives and constraints that *CSLP* and *CLWP* individuals face in their voting decisions.

3 Data and Descriptive Statistics

3.1 Data

The data that we use in this study are drawn from a variety of sources. We focus our empirical investigation on the analysis of the electoral behavior of 16,500 voters interviewed by the World Values Survey association (henceforth WVS) in 14 European countries between the end of 1999 and the beginning of 2000. Appendix 1 contains a complete description of all the data used in our analysis and the list of countries under investigation.

3.1.1 Dependent Variables

Electoral Participation. To describe the voter's participation decision we considered the following question contained in the WVS: "Which party (if any) would you vote tomorrow?" Respondents were given the possibility of answering the question by indicating the party they would vote or by asserting that they would not vote or would cast a blank vote. Therefore, to assess whether an individual would abstain in an election, we constructed a binary dummy variable that takes the value of 1 if she would not vote or cast a blank vote in the election and the value of 0 if she would vote for one of the competing parties. One limitation of using survey data is that the sample turnout rate may differ from the actual one. In our data the overall sample turnout is 82.7%, while the average of the actual turnout in the two elections closest to the survey is 77%. This difference between the self-reported turnout rate and the actual one is in line or even lower than previous studies. The main potential problem arising from having a non-representative sample is the possibility of obtaining biased regression coefficients. However, vote validation studies also suggest that the presence of such a discrepancy has no significant effect on the empirical results.[7] Moreover, excluding the countries where the difference between the self-reported and actual turnout rates is higher then 10% from our sample did not have any significant effect on our results.[8]

Communicative Voting. In order to construct a variable that embodies the trade-off between strategic and communicative motivations in the voting decision, we must

[7] See Matsusaka and Palda (1999) for a discussion of this issue.

[8] See Table A4.1 in the appendix for the regression results obtained from the subsample of countries with low discrepancy between sample and actual turnout rates.

distinguish between parties considered as likely winners and those perceived as sure losers. Since in most European countries the electoral system entails proportional representation, our discriminator for classifying a party as a "likely winner" or a "sure loser" is not given by its dimension (i.e., share of votes). Rather, by using the information contained in Koole and Katz (2000), we make such a classification depending on whether a given party in 1999 was perceived by voters as a party with the *potential* to participate in a government coalition. More specifically, "likely winner" parties are defined as being those belonging and/or supporting a government coalition or those belonging to a coalition that opposes the government and represents a potential and credible alternative to the governing coalition. In contrast, "sure loser" parties are the ones with no chance of being in a winning coalition. This classification allows us to generate a binary dummy variable taking the value of 1 if the party that the individual would vote for is a sure loser and the value of 0 if it is a likely winner.

"Closer to a sure loser party" vs. "Closer to a likely winner party" (CSLP vs. CLWP). In order to classify individuals according to whether their ideologically-closer party was a sure loser or a likely winner, we combined the information drawn from three different data sources. First, we used WVS data to take the self-reported positions of individuals on a single-dimensional political space structured in a 10-point political scale, where 1 indicates the extreme left and 10 the extreme right. Second, we used the Marks and Steenbergen (1999) party dataset to assess the positions held by political parties on the Left-Right political spectrum in each country included in our analysis. Finally, to distinguish between parties considered as likely winners from those sure losers, we took the information contained in Koole and Katz (2000). These three different pieces of information were then combined to determine which party was the closest to the preferences of each individual in our sample and whether it was a likely winner or a sure loser party. We were thus able to construct a binary dummy variable for being *CSLP,* taking the value of 1 if the party whose ideological position was closer to the one self-reported by the individual was a sure loser and 0 if it was a likely winner.[9]

3.1.2 Independent Variables

Individual Characteristics of Voters. In order to analyze the determinants of voter turnout and communicative voting, we included several individual-level explanatory variables. Along with the usual demographics such as age and gender, we added variables indicating

[9] Obviously, relying on such self-reported political preferences implies implicitly assuming that all individuals have the same mapping between political preferences and numbers on the 10-point left-right spectrum. This constitutes a very strong assumption behind the three-stage electoral choice model and thus represents a potential source of measurement errors. Nevertheless, as long as the measurement error is small, the three-stage model may bring additional insights to the analysis not captured by the benchmark model (two-stage model).

education level, income, and the marital and employment status of respondents as proxies that defined socioeconomic status.

We also included two variables meant to capture the idiosyncratic level of interest and the beliefs of each individual regarding the value of political participation. These are the extent to which an individual believes that politics is important and how good she considers the working of the political system in her country.[10]

Information and Political Preferences. In order to test for the empirical relevance of the *swing voter's curse* theory we focused on the questions contained in the WVS regarding the level of information and the political preferences of individuals. First, we constructed a proxy of the individual's level of information about politics by classifying an individual as uninformed when she does not follow politics in the news. Then, we created a variable indicating whether the individual is moderate (when her ideological preferences are close to the median of the left-right political space) or independent (when she does not have an ideological position on the left-right political space) in order to have a proxy of the *swinger* quality of the individual. Finally, we computed the interaction term between these two variables. Controlling for being uninformed and independent if the *swing voter's curse* theory holds true, we should observe that this interaction term is positively correlated with the probability of abstaining.

We should point out that in general it is difficult to draw sound conclusions about the causal relationship on being uninformed and deciding not to participate in the voting process. As observed by Lassen (2005):

> "The problem is that information acquisition is endogenous and, therefore, both the decision to vote and the decision to obtain an education or become informed about political issues can be caused by some third, unobservable, factor. Hence, to make a statement about causal effects in order to empirically evaluate the theoretical work, it is necessary to address the endogeneity problem" (Lassen, 2005, pg. 104).

In other words, if the information variable is endogenous, then the econometric relationship between voting and information may simply represent a correlation rather than a casual link. Nevertheless, we argue that such an endogeneity problem is not worrisome for the validity of our results. First of all, our dataset was constructed on the basis of a general survey rather than an election poll. This implies that, since the information collected is not specifically related to a given election, the individual decision to be

[10] Usually, these kind of "expressive" variables rise concerns due to the possible presence of endogeneity (see Matsusaka and Palda, 1999). However, the two variables that we consider in our analysis capture the idiosyncratic beliefs rather than "actions" of an individual regarding politics. Hence, such endogeneity problem does not seem to apply to our case. Moreover, as shown by Table 3, excluding these variables from our empirical analysis does not have any significant effect on our results.

informed about political issues is not determined by the decision of participating in a specific voting process. Moreover (and more importantly), even if information were to be endogenous, if the *swing voter's curse* theory holds we should still observe a positive correlation between being independent and uninformed and the probability of abstaining. Therefore, although we cannot exclude the presence of such an endogeneity problem, our results are not affected by it.

Country-Level Statistics. Since the electoral behavior of voters may be affected by country-level variables that define the working of political institutions and the functioning of the media system, we collected information that relate to these two dimensions of the European countries under investigation. We gathered data on the electoral systems from the international IDEA Handbook of Electoral System Design (2004). Other variables such as the Herfindahl index of opposition parties, the mean magnitude of an electoral district, the presence of a winner-takes-all system and the threshold for political representation were collected from the Database of Political Institutions (DPI) of the World Bank (Beck, Keefer and Clarke, 2004). At the same time, we included two variables to account for the impact of the country's media system on voting behavior: an index of media freedom taken from the report "Press Freedom 1994-2001", released by Freedom House and, the Herfindahl Index of media concentration drawn from Sanchez-Tabernero (2004).

3.2 Descriptive Statistics

In Tables 1 and 2 we provide a preliminary description of our variables of interest. Specifically, Table 1 displays the differences in terms of individual characteristics between the samples of voters and non-voters in the 14 European countries under investigation.

[Table 1 about here]

On average, individuals who decide to participate in the election seem to give more importance to politics and have a better opinion of the working of the political system as compared to non-voters. This suggests that idiosyncratic characteristics may play an important role in electoral participation. Further, in line with the *swing voter's curse* theory, individuals who do not participate in the voting process are generally less informed about politics and have more moderate political preferences than those who decide to vote. Moreover, voters seem also to earn, on average, higher levels of incomes than non-voters. This indicates that the potential private benefits from voting are likely to affect electoral participation.

Table 2 reports the individual characteristics of strategic and communicative voters,

respectively.

[Table 2 about here]

The t-test for differences in means suggests that individuals voting for a sure loser party seem to have, on average, a worse opinion regarding the working of the political system than those who vote for a likely winner party. This suggests the presence of the so-called "protest voting", i.e., people decide to vote for a sure loser party as a signal to express their dissatisfaction with the functioning of the political system. Communicative voters seem also to be generally more educated and more likely to be politically extremists. Further, individuals whose ideologically-closer party is a sure loser are, on average, less inclined to vote for a likely winner party. Such a difference may be explained by the fact that sincere voting is one of the driving forces in the voting decision.

4 Electoral Participation and Communicative Voting in Europe

Different empirical models may be specified to represent the two alternative electoral decision processes specified in section 2. The first one is a multinomial logit (ML) model where the individual, rather than facing the participation and voting choices sequentially, take them both at once. Thus, the first and second stages belong to a single decision stage, where individuals have three different potential choices: they can abstain, vote for a likely winner party (strategic voting), or vote for a sure loser party (communicative voting). We performed a Small-Hsiao test of the underlying Independence of Irrelevant Alternatives (IIA) assumption of this multinomial logit model. The ML fails the test for the IIA assumption both in the two-stage and three-stage electoral choice models, suggesting that the individual decision process is indeed sequential. The results of the fully specified Small-Hsiao tests are reported in Tables A2.1, A2.2 and A2.3 in Appendix 2. Given the results of the Small-Hsiao tests, we propose and estimate two alternative models: a sequential logit model (SL) and a nested logit model (NL). That is, we estimate the probabilities of electoral participation and communicative voting, respectively, using both SL and NL models. More specifically, the probability of abstaining for individual i in country j is:

$$p_{i,j}^{Abst} = \alpha_1 IND_i^{Abst} + \alpha_2 INST_j + \alpha_3 MEDIA_j + \alpha_4 X_i + \varepsilon_{i,j}, \quad (1)$$

and the probability of voting *as communicating* for individual i in country j is:

$$p_{i,j}^{Comm} = \beta_1 IND_i^{Comm} + \beta_2 INST_j + \beta_3 MEDIA_j + \beta_4 X_i + u_{i,j}, \quad (2)$$

where IND_i^{Abst}, IND_i^{Comm} are vectors of individual characteristics affecting her decision to turn out and to vote *as communicating*, respectively; $INST_j$ is a vector of variables embedding the features of the electoral system of country j; $MEDIA_j$ is a vector of variables capturing the characteristics of the media industry in country j and X_i is a vector of control variables incorporating individual demographic and socioeconomic characteristics such as age, gender, size of the urban area where the individual lives, employment and marital status.

In section 4.1 we present and discuss the results of the estimates of electoral participation (i.e., of equation 1) both in a SL model and NL models. In section 4.2., we present and discuss the results of the estimates of communicative voting (i.e., of equation 2). Again, the empirical analysis is implemented employing both SL and NL models.

4.1 Electoral Participation

Table 3 shows the estimation results on the determinants of abstention in the two-stage electoral choice model for the SL and NL models. In Table 4 we report the marginal effects of the explanatory variables on abstention for the fully specified versions of the same two models.

[Tables 3 and 4 about here]

4.1.1 Information and electoral participation: a test of the *swing voter's curse*

As far as the effect of information on voters' turnout is concerned, being uninformed increases the probability of not voting. Similarly, moderate or independent individuals are less likely to turn out. However, the interaction term indicating whether the individual is uniformed *and* moderate/independent is not statistically significant. These results seem to suggest that being at the same time uninformed and moderate/independent does not affect the individual's decision to turn out, but rather that both characteristics contribute to a different extent to the choice of whether to vote or abstain. Such results are robust to all of the different specifications of our empirical model and to different classifications of uninformed and *swing* voters (see table A3.1 in Appendix 3).[11] Consequently, our empirical findings call into question the empirical relevance of the *swing voter's curse* theory in large elections. Nevertheless, we believe that our results are not necessarily contradictory with the ones obtained by Battaglini et al. (2009) on the empirical relevance of the *swing voter's curse* in an experimental context.[12] In our view, the overall evidence

[11] The results are also robust to alternative definitions of "moderate" voters (i.e., close to the median or the mean of the distribution of party positions in the country where the individual votes). These additional robustness checks results are available upon request to the authors.

[12] Battaglini et al. (2009) test the *swing voter's curse* with a limited number of individuals involved in the lab experiment (i.e., N=14).

provided by our paper and that of those authors seems to suggest that, while in the presence of a limited number of voters (e.g., in a committee), individuals do take into account their pivotal probabilities, and thus their behavior is correctly captured by the *swing voter's curse*, in large elections this is not necessarily true anymore. Indeed, our results are consistent with the empirical predictions on the effect of information on turnout implied by decision-theoretic models of voting behavior (Matsusaka, 1995). Hence, our empirical findings may simply imply that in large elections decision-theoretical models may be able to capture the behavior of voters better than game-theoretical models.[13]

On the other hand, our specification constitutes a more appropriate and more specific test for the empirical relevance of the *swing voter's curse* with respect to Larcinese (2009). Indeed, Larcinese does not control for the behavior of independent voters. We instead explicitly take this into account and perform several sensitivity analyses to test for various specification of informativeness and "swing" quality of voters (see table A3.1 in Appendix 3). Moreover, Larcinese focuses only on Britain, while we investigate the empirical relevance of the *swing voter's curse* both across and within different countries and different electoral systems. Hence, his empirical findings, while consistent with our results, do not constitute an appropriate and comprehensive test of the *swing voter's curse*.

4.1.2 The Role of Political Institutions and the Media Market

Country-level characteristics seem to play an important role in the voter's decision of whether to participate in elections. Specifically, we find that a reduction in the level of freedom in the media has a negative effect on turnout. This evidence is consistent with the idea that higher levels of political control over the media affect the political accountability of parties and muddle up the overall functioning of the democracy (Besley, Burgess and Prat, 2002). At the same time, this result is also supportive of the informational theories on electoral participation which suggest that, in the presence of more "noisy" information, individual incentives to turn out decrease (Matsusaka, 1995, Feddersen and Pesendorfer, 1999).

Some institutional characteristics also seem to have a significant effect on the participation decisions. A higher threshold for representation reduces voter participation in the election. More specifically, a 1% increase in this threshold decreases turnout by 0.4% to 1% depending on the specification. District magnitude also affects the turnout probability: the higher the number of representatives for a given size of the electoral district, the more likely that an individual will turn out (an increase of one standard-deviation in this number increases electoral participation by 1%).

[13] Notice that this conclusion is consistent with the recent results of Coate et al. (2009) on the performance of pivotal-voter models in small scale elections.

As an additional robustness check, we also analyze the role that different electoral systems have on electoral participation. The following table shows the results on abstention in the different subsamples of countries sharing the same electoral system: i.e., First Past the Post (FPTP), Mixed Member System (MMS), Two Rounds System (TRS), Single Transferable Vote (STV) and Proportional (PR).

[Table 5 about here]

In the case of FPTP, TRS and STV, the subsamples contain a limited number of observations and thus the regressions do not provide consistent estimates.[14] Nevertheless, we can see that the signs of the main explanatory variables are homogeneous across different electoral systems. Being moderate or independent *and* uninformed is still not statistically significatively correlated with the probability of abstaining across and within different electoral systems, bringing additional support to our negative result of the empirical relevance of the *swing voter's curse* in large elections. Moreover, in the cases of MMS and PR, where the number of observations is sufficiently large to have consistent estimates, the overall results are in line with what we have found when pooling all the observations from different countries and electoral systems together (see Table 3). Moreover, in order to better explore the role of country-level variables on electoral participation, we also perform an empirical analysis taking into account heterogeneity in media market characteristics and of institutional characteristics within countries sharing a PR system of representation. The following table reports the results of this empirical specification:

[Table 6 about here]

As we can see, as in the case where all the countries with different electoral systems were taken into account, when we restrict our attention to individuals living in a country with a proportional system, a higher level of media freedom and a higher number of representatives for a given size of the electoral district leads to a higher level of electoral participation. On the other hand, in countries with a proportional system, the concentration of opposition parties also seems to play a role. An increase in one standard deviation in the concentration of opposition parties increases the probability of electoral participation by 2.4%.[15]

[14] Moreover, since in our sample the FPTP system is present only in United Kingdom, the STV only in Ireland and the TRS only in France, it is not possible to separate the effect of a given electoral system from the country fixed effect.

[15] Notice that the "winner-takes-all" dummy is still present in Tables 6 and 11 since the "Database of Political Institutions" classifies in 2000 Spain and Greece as having at the same time a Proportional System of Representation and a winner-takes-all one. Indeed, Spain had a majoritarian system for the senate and Greece had a "reinforced PR" system (i.e., majority premium to the most elected party). Nevertheless, dropping this variable or dropping Spain and Greece from the sample do not affect our

4.1.3 The Role of Individual Preferences

Voters having a good opinion of the political system operating in their country as well as those who think that politics is important are more likely to vote. Therefore, in line with the empirical literature on electoral participation (e.g., Coate et al., 2009), our results bring additional empirical support to the idea that "expressive" motivations play an important role in the individual's decision to turn out (Downs, 1957, Riker and Ordeshook, 1968, Fiorina, 1976).

The results from Table 3 also show that individuals whose ideologically-closer party is a sure loser are less likely to vote. More specifically, being closer to a sure loser party decreases the probability of electoral participation by 3.2% to 4.3%, depending on the empirical specification. This result suggests that voters do take into account their expected benefit from voting when deciding whether or not to do so (Riker and Ordeshook, 1968). In order to better explore the role of political preferences on electoral participation and to understand how such preferences interact with institutional characteristics, we report the results of the three-stage electoral choice model in Table 7. Specifically, we consider the empirical results regarding the determinants of electoral participation for the subsamples of individuals *"closer to a sure loser party" (CSLP)* and *"closer to a likely winner party" (CLWP)*, respectively.

[Table 7 about here]

First of all, we should notice that most of the results on individual-specific variables of the two-stage electoral choice model also hold true in the modified structure of the electoral decision process that takes into account the fact that individuals face different choice sets depending on whether their most preferred party is a likely winner (*CLWP* voters) or a sure loser (*CSLP* voters).

With respect to the country-level characteristics lower thresholds for representation and a higher number of elected representatives for a given size of the electoral district are both conducive to higher turnout probabilities for both *CSLP* and *CLWP* voters (as in the previous two-stage electoral choice model). On the other hand, media market characteristics have different effects on the electoral behavior of *CSLP* and *CLWP* voters. A lower level of media freedom negatively affects the probability of electoral participation only for individuals closer to a sure loser party. On the other hand, a higher level of concentration in media ownership seems to be positively correlated with the probability of electoral participation by individuals closer to a likely winner party. This result is in line with the findings of Oberholzer-Gee and Waldfogel (2005) about a "political mobilization" effect due to the structure of media markets. Since the media market is characterized by

results on electoral participation and communicative voting.

fixed costs and economies of scale, a more concentrated media market is more effective at reaching large groups. Therefore, candidates find it easier to mobilize voters. For the same reason, we can think that a more concentrated media market will lower the cost that individuals have to incur in order to learn candidate positions and thus increase the probability of turnout (Matsusaka, 1995, Oberholzer-Gee and Waldfogel, 2005). Finally, a higher concentration of opposition parties increases the probability of turnout of *CSLP* voters.

4.2 Communicative Voting

We now turn our attention to Communicative Voting. In Table 8 we report the empirical results regarding the determinants of communicative voting and in Table 9 we report the marginal effects of the explanatory variables on communicative voting for the fully specified SL and NL models.

[Tables 8 and 9 about here]

4.2.1 *Who* votes for losers?

The results on communicative voting show that better-educated people seem to be more likely to vote *as communicating* rather than strategically. This result, may be surprising at first, since we may have expected more educated people to make the "rational choice" of not voting for a sure loser party. However, as the recent literature on communicative voting shows, the vote for loser parties could be explained in an entirely rational framework. A possible interpretation of this result may indeed lie in the higher awareness that better-educated individuals have on the communicative role of their vote. In other words, voters with a higher educational level better understand that by voting *as communicating* they can influence other individuals (Piketty, 2000) or the political platforms of likely winner parties (Castanheira, 2003). Hence, voting *as communicating* may indeed reflect forward-looking behavior.

On the other hand, uninformed individuals are also more likely to vote *as communicating.* This result, though it may seem to run counter to the positive effect of education on communicative voting, should be interpreted in the light of the fact that uniformed individuals may vote for a sure loser party simply because they are badly informed on the political chances of the party they support.

Finally, voters with a negative attitude towards the working of the political system operating in their own country are more likely to vote *as communicating.* This finding seems to reveal that voters dissatisfied with the way their political system functions are more likely to vote for sure loser parties (what is generally referred in political science as "protest voting").

4.2.2 The Role of Political Institutions and the Media Market

Country-level institutional variables also seem to have a significant impact on communicative voting. The lower the freedom of the media, the more likely the voter casts her vote for a sure loser party (a decrease in one standard deviation in media freedom increases the probability of communicative voting by 2.2%). We might interpret this result as a case of protest voting. The greater the concentration of the parties belonging to the opposition, the less likely individuals will vote for losers (i.e., an increase in one standard deviation in the concentration of opposition parties decreases the probability of communicative voting by 2.1%). This seems to suggest that if opposition parties are more fragmented (i.e., less concentrated), it is more likely that a loser party may receive a significative amount of votes and may thus sooner or later enter into a winning coalition. Finally, the higher the number of representatives elected for a given size of the electoral district, the less likely that individuals will vote for sure loser parties.

As for the case of electoral participation, in order to provide an additional robustness check we also analyze the role that different electoral systems have on communicative voting.

[Table 10 about here]

As we mentioned before, the FPTP, TRS and STV subsamples contain a limited number of observations and thus the regression do not provide consistent estimates. Nevertheless, we can see that the signs of the main explanatory variables are homogenous across different electoral systems. Moreover, in the case of MMS and PR where the number of observations is sufficiently high to have consistent estimates, the overall results are in line with what we found when pooling all of the observations from different countries and electoral systems (see Table 8).

In order to better explore the role of country-level variables on communicative voting, we also performed an empirical analysis that accounts for the heterogeneity of media market characteristics and of institutional characteristics within countries that share a proportional system of representation. The following table reports the results of this empirical specification:

[Table 11 about here]

We can see that, within countries sharing a PR system, higher levels of media freedom and media concentration both decrease the probability of communicative voting. As expected, the presence of a winner-takes-all system also decreases the probability of voting for a sure loser party. *Vice-versa*, a higher threshold for representation increases the votes for sure loser party. A 1% increase in the representation threshold increases communicative voting by 0.4% to 1.8 depending on the specification. Such results suggest that voters respond to an increase in the representation threshold by voting more often for sure

loser parties in order to ensure that such parties will be represented in the political system. Finally, as for the case of the whole sample where we considered all individuals in different electoral systems together, a higher concentration of opposition parties and a higher number of elected representatives for a given size of the electoral district, both lead to a lower probability of voting *as communicating.*

4.2.3 The Role of Political Preferences

Differences in political preferences seem to play a significative role in the likelihood of voting *as communicating.* Right-wing extremists are more likely to vote strategically for a likely winner party than are moderate voters. On the other hand, leftist extremists do not behave statistically differently from moderate voters. A possible explanation of this asymmetry between the behavior of left-wing and right-wing extremists may lie in the presence of a "supply effect". In some of the countries in our sample, there are no extreme-right loser parties and/or extreme-left loser parties. Since in such cases extremist voters have a restricted choice set, the results may be affected by this "supply effect". However, restricting our sample to countries that only have extremist loser parties does not change our results in any significant way (see table A4.2 in Appendix 4). Hence, such a "supply effect" does not seem to account for the presence of this asymmetry.[16]

Voters displaying preferences closer to the platform of a sure loser party show a greater probability of casting a communicative vote (being *CSLP* increases the probability of communicative voting by 3.6% to 10% depending on the empirical specification). This finding seems to suggest the presence of sincere voting even by individuals whose ideologically-closer party is a sure loser. To better understand and explore the role of such political preferences on communicative voting, analogously to what we have done for our empirical analysis of electoral participation, we report in Table 12 the results of the three-stage electoral choice model. We consider the empirical results regarding the determinants of communicative voting for the subsamples of individuals *"closer to a sure loser party" (CSLP)* and *"closer to a likely winner party" (CLWP)*, respectively.

[Table 12 about here]

Most of the results of communicative voting in the *CSLP* and *CLWP* subsamples are similar to those obtained in the two-stage electoral choice model. Education and "protest voting" continue to play an important role in determining communicative voting. As before, right-wing extremists seem to be very strategic: they are more likely to vote for a likely winner party than moderate voters, regardless of whether their preferred party is a

[16] Obviously, understanding the different rationales behind the electoral behavior of right and left wing extremists is beyond the scope of this paper. Nevertheless, we believe that documenting this empirical finding may prove useful for future theoretical and empirical research.

likely winner (when they are *CLWP*) or a sure loser (when they are *CSLP*). In contrast, left-wing extremists are more likely to vote for a winner party than moderate voters when their preferred party is a likely winner, and more likely to vote for a loser party when their preferred party is a sure loser. This result seems to suggest that leftist extremists are more likely to vote sincerely, regardless of whether their preferred party is a winner or a loser.

As in the case of electoral participation, the functioning of the media system seems to exercise different effects on *CSLP* and *CLWP* voters. A lower level of media freedom is associated with a higher probability of communicative voting by *CSLP* voters. On the other hand, the higher the concentration in the market for news, the more likely that *CLWP* individuals will vote strategically. Again, we can interpret this result in the light of Oberholzer-Gee and Waldfogel (2005). A higher concentration in the market for news implies that larger groups and thus larger (likely winner) parties are more represented. Smaller (likely loser) parties will find less space in the media and thus, *ceteris paribus*, people will be less inclined to vote for them.

As in the two stage model, a higher concentration of opposition parties and a higher number of elected representatives for a given size of the electoral district leads to a higher probability of voting strategically especially in the *CSLP* subsample.

5 Conclusions

Elections are a decision mechanism where voters are involved in two different choices. Voters face a participation decision in which they must choose whether to go to the polling stations and cast their vote. At the same time, they face a voting decision in which they have to decide whom to vote for.

We constructed a unified empirical framework in which both the participation decision and the voting decision are taken into account. We proposed two alternative specifications of the electoral decision process. The first is a two-stage decision process where the individual makes a participation and a voting decision. The second is characterized by a three-stage structure where, prior to making the above two electoral decisions, the individual takes into account the fact that her preferred party is either a likely winner or a sure loser.

Our main findings can be summarized as follows. The evidence regarding the role of information shows that individuals who are either independent *or* uninformed are less likely to turn out. However, being both independent *and* uninformed does not have a statistically significant effect on electoral participation. Hence, our results seem to question the empirical relevance of the *swing voter's curse* theory of abstentionism in large elections. Second, the probability of individual turnout is lower in the presence of a

lower level of media freedom, a higher threshold for political representation, and a lower number of representatives for a given size of the electoral district. On the other hand, the probability of voting *as communicating* is higher in the presence of a lower media freedom and a lower concentration of opposition parties. We also show that individual preferences affect both the participation and voting decisions. The probability of abstentionism and of communicative voting is lower for individuals whose ideologically-closer party is a likely winner, who consider politics important, and who have a good opinion of the political system of their country. Left-wing extremists are more likely to vote for their most preferred party regardless of whether this party is a sure loser, while right-wing extremists are very strategic (even more strategic than moderate voters). We also find evidence supporting the recent theoretical literature on communicative voting which suggests that voting for sure loser parties may indeed reflect forward-looking behavior (Piketty, 2000, Castanheira, 2003, Razin, 2003): better-educated people are more likely to vote *as communicating*, rather than strategically.

Finally, we have pointed out how the characteristics of the electoral system and of the media market of a country have different effects on the behavior of individuals with different preferences. More specifically, the incentives to turn out and vote *as communicating* of individuals whose ideologically-closer party is a likely winner are affected differently by variation in institutional characteristics with respect to those of individuals whose ideologically-closer party is a sure loser. Therefore, we believe that our findings on the different impact that institutional characteristics may have on the incentives of different individuals to turn out and vote *as communicating* suggest that future research should focus on this issue. Specifically, exploiting a dataset that provides a direct measure of individual party identification and individual votes across different countries may help to better understand the important link between individual preferences and institutional characteristics. This line of research may help guide public policies aimed at influencing electoral participation and/or communicative voting in different countries.

APPENDIX 1

The Data

The main data source used in our empirical investigation is the World Value Survey (1999-2002). This data collection represents the fourth and most recent wave carried out by the World Values Survey and European Values Survey groups. The surveys covers 60 countries and are representative of the universe of all adults aged 18 or above. Each individual has two corresponding weight attached. The first one is a national level post-stratification weight. In other words, it is the weight attached to the individual to correct the sample to reflect the national distribution of individuals.[17] The second one is a post-stratification weight to correct for the fact that some countries have much bigger samples than others, and their sizes are not related to the relative size of their population. In other words, this second weight allows analyzing the behavior of individuals belonging to national different surveys. Since our dataset contains individuals of 14 different European countries, we use this cross-national weight in our empirical study.

The 14 European countries under investigation in our study are the following: Austria, Denmark, Belgium, Netherlands, Sweden, Finland, Portugal, Spain, Greece, Germany, Italy, France, United Kingdom and Ireland. The second data source that we employ in our analysis is drawn from Koole and Katz (2000). More specifically, we have analyzed the information contained in there to classify each party in each of the 14 countries as a "sure loser" or a "likely winner". The third data set we use is the Mark and Steenbergen (1999) expert survey on the position of parties on the left-right scale in the 14 countries under analysis. To capture the functioning of the media market in the country where the individual is eligible to vote we have used the information contained in the "Press freedom 1994-2001" released by The Freedom House and the Herfindahl Index of media concentration contained Sanchez-Tabernero (2004). Finally, we used the Database of Political Institutions (DPI 2004) of the World Bank to construct the variables regarding the institutional characteristics of each country.

[Table A1.1 about here: Description of variables]

[Table A1.2 about here: Summary statistics]

[17] For example, if the sample contains twice as many university-educated respondents as there are in the adult population as a whole, members of this group are given a weight of 0.5.

APPENDIX 2

Small-Hsiao Tests of IIA Assumptions in Multinomial Logit Model

Table A2.1 reports the results of the Small-Hsiao tests of the IIA assumption over the fully specified Multinomial Logit model for the two stage electoral choice model.[18]

[Table A2.1 about here]

Tables A2.2 and A2.3 report the results of the Small-Hsiao tests of the IIA assumption over the fully specified Multinomial Logit model for the three stage electoral choice model, relative to the subsamples of *CSLP* and *CLWP* voters, respectively.

[Tables A2.2 and A2.3 about here]

APPENDIX 3

Robustness Checks on the Swing Voter's Curse

Table A3.1 reports the results of the robustness checks on the test on the swing voter's curse for different specifications of swinger voters (only independents, no moderates) and different specification of informativeness. The results of these robustness checks are not supporting the theoretical prediction. Indeed, being independent and uninformed seems actually to be *positively* correlated with the probability of turnout.

[Table A3.1 about here]

In Table A3.2 we report the numbers and the percentage of moderate/independent voters who are also uninformed in all the different specifications of our test of the *swing voter's curse.*

[Table A3.2 about here]

[18] The Small-Hsiao test "avoids both the asymptotic bias of the likelihood ratio test originally suggested by McFadden, Train and Tye, and the matrix manipulation and inversion required for the Hausman-type test recently suggested by Hausman and McFadden" (Small and Hsiao (1985); pg. 625).

APPENDIX 4

Robustness Checks on different countries subsamples

In this appendix, we perform some robustness checks on electoral participation and communicative voting on different countries subsamples. First, we exclude from our sample all the countries where the difference between the average turnout in the two closest elections and the sample turnout is higher than 10% (i.e., Finland, France, Ireland, Netherlands and Portugal). Table A4.1. reports the regression results on abstention and communicative voting for the fully specified nested logit model on this subsample.

[Table A4.1 about here]

As a second robustness check of our results we exclude from our sample all the countries where there are no extreme loser parties (either on the left or on the right of the political spectrum) (i.e., Austria, Ireland, Finland, Spain, Sweden, Belgium). Table A4.2. reports the regression results on communicative voting for the fully specified nested logit model on this subsample.

[Table A4.2 about here]

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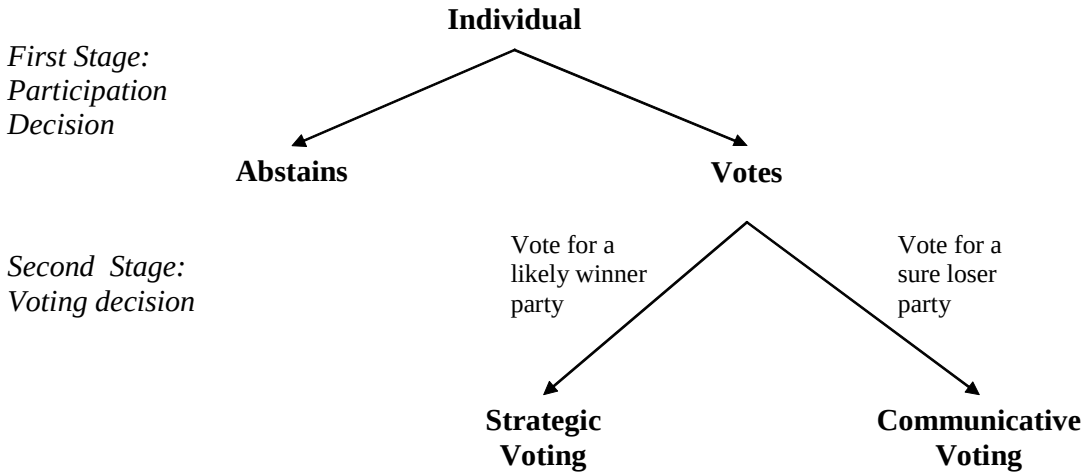

Figure 1: The Two-Stage Electoral Choice Model

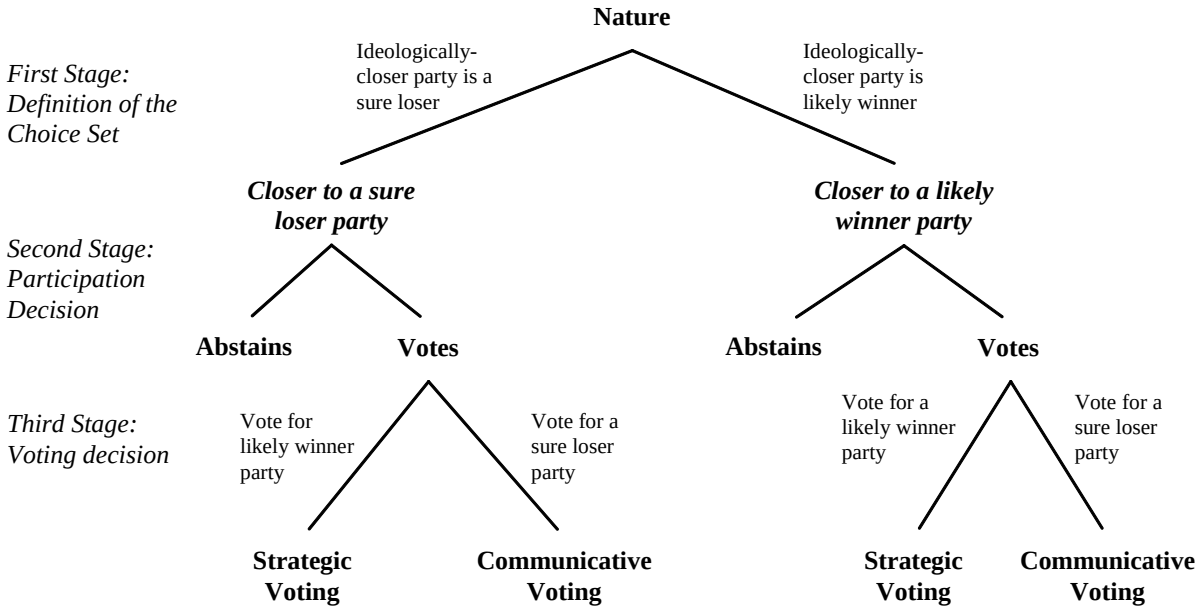

Figure 2: The Three-Stage Electoral Choice Model

Table 1. Voters and abstentionists

	Voters	**Abstentionists**	**t-test H0: Vectors of means are equal for the two samples**
Average level of information about politics : 1 (highest) to 5 (lowest)	1.910	2.510	Prob > |t| = 0,0000
Average level of importance given to politics: 1 (highest) to 4 (lowest)	2.690	3.110	Prob > |t| = 0,0000
Average valuation of the political system (1 to 10)	5.490	4.900	Prob > |t| = 0,0000
Percentage of women	51.56%	60.95%	Prob > |t| = 0,0000
Average age	46.150	42.024	Prob > |t| = 0,0000
Average level of education (1 to 8)	4.400	4.230	Prob > |t| = 0,0001
Average level of income (1 to 10)	5.200	4.670	Prob > |t| = 0,0000
Percentage of individuals closer to a "sure loser" party (*CSLP*)	37.58%	44.94%	Prob > |t| = 0,0000
Percentage of individuals closer to a "likely winner" party (*CLWP*)	62.45%	55.14%	Prob > |t| = 0,0000
Percentage of moderates	38.65%	46.94%	Prob > |t| = 0,0000
Percentage of independents	6.32%	25.16%	Prob > |t| = 0,0000
Percentage of independents or moderates	44.88%	72.38%	Prob > |t| = 0,0000

Table 2. Communicative and strategic voters

	Strategic Voters	**Communicative Voters**	**t-test H0: Vectors of means are equal for the two samples**
Average level of information about politics : 1 (highest) to 5 (lowest)	1.900	1.960	Prob > |t| = 0,0395
Average level of importance given to politics (1 to 4)	2.699	2.670	Prob > |t| = 0,1849
Average valuation of the political system (1 to 10)	5.630	4.900	Prob > |t| = 0,0000
Percentage of women	51.38%	52.33%	Prob > |t| = 0,3910
Average age	46.770	43.460	Prob > |t| = 0,0000
Average level of education (1 to 8)	4.280	4.890	Prob >|t| = 0,0000
Average level of income (1 to 10)	5.210	5.170	Prob > |t| = 0,5601
Percentage of individuals closer to a "sure loser" party (*CSLP*)	34.78%	49.80%	Prob > |t| = 0,0000
Percentage of individuals closer to a "likely winner" party (*CLWP*)	65.27%	50.18%	Prob > |t| = 0,0000
Percentage of independents or moderates	44.78%	45.33%	Prob > |t| = 0.6161
Percentage of Leftist extremists	7.20%	11.59%	Prob > |t| = 0,0000
Percentage of Rightist Extremists	12.28%	11.90%	Prob > |t| = 0.5987

Table 3. Abstention

	(1) SL	(2) SL	(3) SL	(4) SL	(5) SL	(6) NL
High level of education	0.108	-0.0113	-0.0509	0.0767	0.0694	0.158*
	(0.0723)	(0.0769)	(0.0726)	(0.0743)	(0.0744)	(0.0808)
High level of income	-0.481***	-0.294***	-0.387***	-0.332***	-0.330***	-0.437***
	(0.111)	(0.114)	(0.112)	(0.112)	(0.112)	(0.134)
Good opinion about political system	-0.551***	-0.455***		-0.452***	-0.438***	-0.784***
	(0.0505)	(0.0534)		(0.0523)	(0.0524)	(0.0824)
Believe politics is important	-0.630***	-0.586***		-0.603***	-0.596***	-0.611***
	(0.0593)	(0.0603)		(0.0606)	(0.0605)	(0.0724)
Uninformed about politics	0.385***	0.495***	0.662***	0.467***	0.468***	0.651***
	(0.117)	(0.119)	(0.115)	(0.120)	(0.120)	(0.140)
Moderate or independent	0.965***	1.036***	1.059***	0.973***	1.004***	0.963***
	(0.0590)	(0.0613)	(0.0595)	(0.0596)	(0.0602)	(0.0604)
Moderate or independent * uninformed	0.0441	0.0841	-0.00620	0.0405	0.0226	-0.0159
	(0.132)	(0.134)	(0.132)	(0.135)	(0.135)	(0.135)
Closer to sure loser party	0.291***	0.194***	0.295***		0.244***	0.643***
	(0.0491)	(0.0546)	(0.0495)		(0.0503)	(0.0857)
Inverse index media freedom			0.0282***	0.0221***	0.0243***	0.0428***
			(0.00524)	(0.00538)	(0.00545)	(0.00742)
HH index of media concentration			-0.0370	-0.0183	-0.0189	-0.145***
			(0.0326)	(0.0333)	(0.0329)	(0.0456)
Winner-takes-all system			0.0886	0.125	0.0957	0.220*
			(0.0889)	(0.0907)	(0.0915)	(0.128)
Threshold for representation			0.0743***	0.0764***	0.0747***	0.0632***
			(0.0165)	(0.0168)	(0.0168)	(0.0221)
Herfindahl index of opposition parties			-0.00433	0.146	0.0476	-2.036***
			(0.217)	(0.220)	(0.221)	(0.497)
Mean district magnitude			-0.00638***	-0.00479***	-0.00474***	-0.00802***
			(0.00103)	(0.00105)	(0.00105)	(0.00128)
Country-specific dummies	NO	YES	NO	NO	NO	NO
Log Likelihood	-7208.13	-7003.38	-7224.95	-7088.59	-7073.31	-9264.44
Observations	16555	16555	16555	16555	16555	16555
Pseudo R^2	0.114	0.140	0.112	0.129	0.131	
Percentage of correct predictions	80.76	80.22	80.07	80.48	80.50	94.67

Note. Dependent variable is whether the individual would not vote in a general election. All regression include age, gender, size of urban area, employment and marital status dummies. Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 4. Marginal Effects Abstention

	SL	NL
High level of education	0.00917	0.0216*
High level of income	-0.0391***	-0.0224***
Good opinion about political system	-0.0568***	-0.0283***
Believe politics is important	-0.0740***	-0.0204***
Uninformed about politics	0.0671***	0.0451***
Moderate or independent	0.131***	0.045***
Moderate or independent * uninformed	0.00296	-0.0009
Closer to sure loser party	0.0325***	0.0435***
Inverse index media freedom	0.00317***	0.0093***
HH index of media concentration	-0.00246	-0.0027***
Winner-takes-all system	0.0125	0.0138
Threshold for representation	0.00973***	0.004***
Herfindahl index of opposition parties	0.0062	-0.0003***
Mean district magnitude	-0.000618***	-0.0101***
Observations	16555	16555

Note. Dependent variable is whether the individual would not vote in a general election. All regression include age, gender, size of urban area, employment and marital status dummies.
*** p<0.01, ** p<0.05, * p<0.1

Table 5. Abstention in different electoral systems

	FPTP		MMS		TRS		STV		PR	
	SL	NL	SL	NL	SL	NL	SL	NL	SL	NL
High level of education	-0.161	-0.531	-0.345*	-0.291	0.124	0.233	0.382	0.405	0.0580	0.187
	(0.349)	(0.657)	(0.185)	(0.221)	(0.228)	(0.251)	(0.328)	(0.511)	(0.0994)	(0.119)
High level of income	-0.755	-0.941	-0.541**	-0.782***	0.291	0.793	-0.544	-0.935	-0.253*	-0.358**
	(0.915)	(1.052)	(0.220)	(0.265)	(0.430)	(0.538)	(0.501)	(0.663)	(0.140)	(0.156)
Good opinion about the political system	-0.534**	-0.318	-0.328***	-0.596***	-0.355*	-0.120	-0.498**	-1.198**	-0.526***	-0.782***
	(0.237)	(0.375)	(0.107)	(0.180)	(0.182)	(0.275)	(0.225)	(0.585)	(0.0683)	(0.109)
Believe politics is important	-1.178***	-1.218***	-0.668***	-0.811***	-0.858***	-0.858***	-0.360	-0.806	-0.492***	-0.508***
	(0.271)	(0.301)	(0.115)	(0.141)	(0.198)	(0.214)	(0.279)	(0.540)	(0.0786)	(0.0853)
Uninformed about politics	-0.557	-0.703	0.755***	0.812***	0.195	0.140	1.344***	0.705	0.508***	0.572***
	(0.540)	(0.612)	(0.221)	(0.262)	(0.384)	(0.414)	(0.511)	(1.406)	(0.151)	(0.157)
Moderate or independent	0.966**	1.136***	1.076***	1.073***	1.266***	1.214***	0.488	0.564	1.023***	0.997***
	(0.389)	(0.424)	(0.116)	(0.120)	(0.196)	(0.198)	(0.353)	(0.374)	(0.0802)	(0.0800)
Moderate or independent * uninformed	0.603	0.617	-0.155	-0.169	0.258	0.209	-0.505	-0.413	0.196	0.195
	(0.586)	(0.595)	(0.272)	(0.264)	(0.441)	(0.448)	(0.555)	(0.721)	(0.169)	(0.168)
Closer to sure loser party	0.304	0.667	0.406***	0.721***	0.515***	0.201	-0.333	0.890	0.105	0.293***
	(0.283)	(0.461)	(0.103)	(0.183)	(0.188)	(0.281)	(0.551)	(2.905)	(0.0691)	(0.102)
Country-specific dummies	NO	NO	YES	YES	NO	NO	NO	NO	YES	YES
Log Likelihood	-357.51	-724.68	-1643.81	-1323.27	-561.39	-633.75	-346.03	-511.00	-4101.69	-5833.215
Observations	813	813	3332	3332	1254	1254	904	904	10252	10252
Pseudo R^2	0.155		0.123		0.145		0.140		0.153	
Percentage of correct predictions	79.68	91.88	78.82	90.31	78.9	92.42	78.99	97.23	80.47	94.27

Note. Dependent variable is whether the individual would not vote in a general election. All regression include age, gender, size of urban area, employment and marital status dummies. Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 6. Abstention in Countries with Proportional Voting

	SL		NL	
	Coefficients	Marginal Effects	Coefficients	Marginal Effects
High level of education	0.0677	0.0081	0.185	0.0109
	(0.0986)		(0.121)	
High level of income	-0.253*	-0.0278	-0.294**	-0.0150
	(0.140)		(0.149)	
Good opinion about political system	-0.523***	-0.0620	-0.709***	-0.0215
	(0.0680)		(0.101)	
Believe politics is important	-0.491***	-0.0557	-0.474***	-0.0158
	(0.0787)		(0.0823)	
Uninformed about politics	0.519***	0.0690	0.587***	0.0379
	(0.151)		(0.160)	
Moderate or independent	1.015***	0.1230	0.978***	0.0438
	(0.0796)		(0.0798)	
Moderate or independent * uninformed	0.189	0.0235	0.202	0.0125
	(0.169)		(0.168)	
Closer to sure loser party	0.115*	0.0137	0.315***	0.0176
	(0.0680)		(0.122)	
Inverse index media freedom	0.0758***	0.0089	0.114***	0.0278
	(0.0107)		(0.0243)	
HH index of media concentration	0.555***	0.0654	0.0983	0.0141
	(0.186)		(0.320)	
Winner-takes-all system	1.173***	0.1760	0.0702	-0.0090
	(0.384)		(0.735)	
Threshold for representation	-0.0230	-0.0027	0.0589	0.0037
	(0.0313)		(0.0544)	
Herfindahl index of opposition parties	-3.544***	-0.4180	-3.403***	-0.0243
	(0.870)		(0.895)	
Mean district magnitude	-0.00653***	-0.0008	-0.00942***	-0.0164
	(0.00116)		(0.00195)	
Log Likelihood	-4103.87		-5815.10	
Observations	10252		10252	
Pseudo R^2	0.153			
Percentage of correct predictions	80.72		94.36	

Note. Dependent variable is whether the individual would not vote in a general election. All regression include age, gender, size of urban area, employment and marital status dummies. Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 7. Abstention - Subsamples of *CSLP* and *CLWP* voters

	Subsample of "Closer to Sure Loser Party" voters (*CSLP*)		Subsample of "Closer to Likely Winner Party" voters (*CLWP*)	
	SL	NL	SL	NL
High level of education	-0.0274	0.670**	0.110	0.250**
	(0.116)	(0.273)	(0.0968)	(0.126)
High level of income	-0.230	-0.376	-0.376**	-0.450***
	(0.169)	(0.279)	(0.150)	(0.163)
Good opinion about political system	-0.403***	-1.014***	-0.473***	-0.695***
	(0.0817)	(0.185)	(0.0684)	(0.138)
Believe politics is important	-0.545***	-0.435***	-0.612***	-0.647***
	(0.0976)	(0.154)	(0.0771)	(0.0847)
Uninformed about politics	0.435**	0.628***	0.521***	0.615***
	(0.192)	(0.237)	(0.150)	(0.173)
Moderate or independent	1.358***	1.330***	0.878***	0.890***
	(0.108)	(0.112)	(0.0785)	(0.0790)
Moderate or independent * uninformed	-0.0846	-0.108	0.0378	0.0345
	(0.211)	(0.209)	(0.172)	(0.171)
Inverse index media freedom	0.0712***	0.153***	-0.00426	-0.00192
	(0.0107)	(0.0314)	(0.00728)	(0.00825)
HH index of media concentration	-0.0739	-0.268**	-0.123**	-0.227***
	(0.0492)	(0.112)	(0.0509)	(0.0710)
Winner-takes-all system	-0.0962	-0.596**	0.149	0.445*
	(0.177)	(0.301)	(0.112)	(0.242)
Threshold for representation	0.0170	0.115**	0.116***	0.0762**
	(0.0289)	(0.0566)	(0.0218)	(0.0379)
Herfindahl index of opposition parties	-1.130***	-6.335***	1.500***	0.634
	(0.311)	(1.853)	(0.343)	(0.746)
Mean district magnitude	-0.00346*	-0.0145***	-0.00452***	-0.00549***
	(0.00184)	(0.00397)	(0.00133)	(0.00149)
Log Likelihood	-2945.83	-3686.16	-4097.83	-5485.69
Observations	6462	6462	10093	10093
Pseudo R^2	0.152		0.122	
Percentage of correct predictions	78.74	89.8	82.1	96.89

Note. Dependent variable is whether the individual would not vote in a general election. All regression include age, gender, size of urban area, employment and marital status dummies. Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 8. Communicative Voting

	(1) SL	(2) SL	(3) SL	(4) SL	(5) NL
Middle level of education	0.318***	0.163**	0.317***	0.282***	0.856***
	(0.0678)	(0.0713)	(0.0677)	(0.0685)	(0.262)
High level of education	0.508***	0.289***	0.427***	0.391***	1.115***
	(0.0757)	(0.0808)	(0.0769)	(0.0776)	(0.323)
High level of income	-0.164	-0.137	-0.0924	-0.122	-0.580
	(0.111)	(0.113)	(0.112)	(0.112)	(0.383)
Good opinion about political system	-0.620***	-0.494***	-0.498***	-0.482***	-1.632***
	(0.0544)	(0.0575)	(0.0559)	(0.0563)	(0.339)
Believe politics is important	0.0277	0.00782	0.000720	0.0158	-0.0727
	(0.0577)	(0.0591)	(0.0581)	(0.0586)	(0.189)
Uninformed about politics	0.222***	0.201**	0.224***	0.215***	0.798***
	(0.0761)	(0.0810)	(0.0768)	(0.0782)	(0.297)
Left-wing extremist	0.155*	0.205**	0.413***	0.101	0.169
	(0.0864)	(0.0867)	(0.0875)	(0.0876)	(0.250)
Right-wing extremist	-0.260***	-0.300***	-0.0437	-0.335***	-1.763***
	(0.0842)	(0.0917)	(0.0849)	(0.0880)	(0.366)
Closer to sure loser party	0.665***	0.544***		0.719***	2.286***
	(0.0539)	(0.0605)		(0.0570)	(0.398)
Inverse index media freedom			0.0419***	0.0474***	0.108***
			(0.00613)	(0.00630)	(0.0237)
HH index of media concentration			-0.0873**	-0.0623	-0.452***
			(0.0393)	(0.0385)	(0.134)
Winner-takes-all system			0.158	0.0805	0.925*
			(0.106)	(0.110)	(0.514)
Threshold for representation			-0.0358*	-0.0417**	-0.0902
			(0.0195)	(0.0194)	(0.0702)
Herfindahl index opposition parties					
			-2.728***	-3.168***	-11.78***
			(0.256)	(0.257)	(2.352)
Mean district magnitude			-0.00411***	-0.00462***	-0.0164***
			(0.000861)	(0.000877)	(0.00397)
Country-specific dummies	NO	YES	NO	NO	NO
Log Likelihood	-5843.71	-5622.40	-5828.67	-5732.02	-9264.44
Observations	13175	13175	13175	13175	13175
Pseudo R^2	0.0528	0.0886	0.0552	0.0709	
Percentage of correct predictions	81.3	81.6	81.3	81.3	90.25

Note. Dependent variable is whether the individual would vote for a "sure loser party" in a general election. All regression include age, gender, size of urban area, employment and marital status dummies. Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 9. Marginal Effects Communicative Voting

	SL	NL
High level of education	0.0555***	0.0202***
High level of income	-0.0156	-0.0248
Good opinion about political system	-0.0641***	-0.0182***
Believe politics is important	0.0021	-0.0261
Uninformed about politics	0.0299***	0.0436***
Left-wing extremist	0.0138	-0.00001
Right-wing extremist	-0.0406***	-0.0006***
Closer to sure loser party	0.103***	0.0366***
Inverse index media freedom	0.00627***	0.0221***
HH index of media concentration	-0.0082	-0.0079***
Winner-takes-all system	0.0107	0.009*
Threshold for representation	-0.00551**	0.0045
Herfindahl index of opposition parties	-0.418***	-0.0215***
Mean district magnitude	-0.00061***	-0.0195***
Observations	13175	13175

Note. Dependent variable is whether individual would vote for a "sure loser party" in a general election. All regression include age, gender, size of urban area, employment and marital status dummies. Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 10. Communicative Voting in different electoral systems

	FPTP		MMS		TRS		STV		PR	
	SL	NL	SL	NL	SL	NL	SL	NL	SL	NL
Middle level of education	0.178	-0.443	0.0930	-0.0891	0.156	-0.206	0.403	2.827	0.190**	0.201
	(0.241)	(0.923)	(0.158)	(0.440)	(0.236)	(0.496)	(0.478)	(9.965)	(0.0906)	(0.178)
High level of education	0.457	-1.060	0.191	0.346	-0.102	0.440	0.547	0.371	0.347***	0.509*
	(0.321)	(1.737)	(0.197)	(0.508)	(0.239)	(0.524)	(0.569)	(4.150)	(0.102)	(0.261)
High level of income	0.228	-0.737	-0.116	-0.952	-1.557**	3.006	-1.047	-4.804	-0.106	-0.479*
	(0.637)	(2.014)	(0.242)	(0.736)	(0.691)	(3.024)	(1.006)	(8.002)	(0.136)	(0.289)
Good opinion about political system	-0.544***	0.965	-0.617***	-1.965**	-0.557***	1.234	-1.099***	-7.998	-0.432***	-1.008**
	(0.206)	(1.151)	(0.140)	(0.764)	(0.203)	(1.059)	(0.374)	(7.868)	(0.0709)	(0.446)
Believe politics is important	0.0601	-0.0985	-0.204	-0.832*	0.146	-0.0611	-0.832*	-5.333	0.0818	-0.0701
	(0.231)	(0.497)	(0.127)	(0.449)	(0.197)	(0.398)	(0.425)	(6.529)	(0.0744)	(0.145)
Uninformed about politics	0.283	-0.511	0.334	0.552	0.386	-0.363	-0.00574	-7.564	0.185*	0.322
	(0.239)	(0.757)	(0.207)	(0.581)	(0.275)	(0.506)	(0.442)	(16.75)	(0.103)	(0.257)
Left-wing extremist	-0.0916	0.0901	0.403**	0.656	-0.200	0.603	-0.0918	-4.545	0.253**	0.178
	(0.478)	(0.855)	(0.197)	(0.447)	(0.276)	(0.672)	(1.253)	(8.194)	(0.110)	(0.210)
Right-wing extremist	-0.370	0.723	-0.559***	-2.016***	0.306	-0.749	-0.383	-2.167	-0.258**	-0.840*
	(0.361)	(0.847)	(0.195)	(0.630)	(0.345)	(0.695)	(0.615)	(2.674)	(0.114)	(0.457)
Closer to sure loser party	-0.297	0.634	0.936***	2.553***	0.503**	-0.797	0.252	10.64	0.613***	0.964**
	(0.260)	(1.017)	(0.156)	(0.918)	(0.256)	(0.714)	(0.696)	(31.22)	(0.0718)	(0.396)
Country-specific dummies	NO	NO	YES	YES	NO	NO	NO	NO	YES	YES
Log Likelihood	-354.45	-724.68	-1029.42	-1323.27	-452.49	-633.75	-168.58	-511.00	-3498.72	-5833.22
Observations	624	624	2484	2484	979	979	739	739	8304	8304
Pseudo R^2	0.0621		0.0909		0.0884		0.193		0.0990	
Percentage of correct predictions	76.03	80.78	80.85	87	80.24	89.27	76.99	97.27	81.7	89.96

Note. Dependent variable is whether the individual would vote for a "sure loser party" in a general election. All regression include age, gender, size of urban area, employment and marital status dummies. Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 11. Communicative Voting in Countries with Proportional Voting

	SL		NL	
	Coefficients	Marginal Effects	Coefficients	Marginal Effects
High level of education	0.353***	0.0480	0.486	0.0087
	(0.100)		(0.305)	
High level of income	-0.0801	-0.0101	-0.173	-0.0164
	(0.135)		(0.226)	
Good opinion about political system	-0.414***	-0.0537	-0.696*	-0.0120
	(0.0706)		(0.403)	
Believe politics is important	0.0771	0.00993	0.0668	-0.0211
	(0.0746)		(0.115)	
Uninformed about politics	0.206**	0.0278	0.367	0.0360
	(0.103)		(0.298)	
Left-wing extremist	0.251**	0.0347	0.244	-0.0003
	(0.110)		(0.170)	
Right-wing extremist	-0.282**	-0.0335	-0.680	0.0009
	(0.114)		(0.496)	
Closer to sure loser party	0.690***	0.0939	1.039*	0.0086
	(0.0705)		(0.544)	
Inverse index media freedom	0.145***	0.0187	0.206*	0.0784
	(0.0138)		(0.106)	
HH index of media concentration	-0.479**	-0.0614	-1.256*	-0.0070
	(0.191)		(0.730)	
Winner-takes-all system	-1.941***	-0.1640	-3.775*	0.0259
	(0.413)		(2.060)	
Threshold for representation	0.142***	0.0182	0.301*	0.004
	(0.0331)		(0.179)	
Herfindahl index of opposition parties	-3.539***	-0.4540	-3.676*	-0.0452
	(0.925)		(2.169)	
Mean district magnitude	-0.00817***	-0.0011	-0.0131*	-0.034
	(0.000973)		(0.00714)	
Log Likelihood	-3517.24		-5815.10	
Observations	8304		8304	
Pseudo R^2	0.0943			
Percentage of correct predictions	80.72		90.67	

Note. Dependent variable is whether the individual would vote for a "sure loser party" in a general election. All regression include age, gender, size of urban area, employment and marital status dummies. Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 12. Communicative Voting - Subsamples of *CSLP* and *CLWP* voters

	Subsample of "Closer to Sure Loser Party" voters (*CSLP*)		Subsample of "Closer to Likely Winner Party" voters (*CLWP*)	
	SL	NL	SL	NL
Middle level of education	0.253**	1.487**	0.285***	0.644
	(0.1000)	(0.647)	(0.0960)	(0.417)
High level of education	0.416***	2.374***	0.386***	0.763
	(0.120)	(0.896)	(0.103)	(0.482)
High level of income	-0.0410	-0.616	-0.188	-0.476
	(0.169)	(0.828)	(0.154)	(0.430)
Good opinion about political system	-0.510***	-2.238***	-0.498***	-1.283*
	(0.0848)	(0.662)	(0.0772)	(0.779)
Believe politics is important	0.129	0.350	-0.0752	-0.202
	(0.0849)	(0.422)	(0.0821)	(0.210)
Uninformed about politics	0.235**	0.774	0.193*	0.526
	(0.109)	(0.491)	(0.112)	(0.452)
Left-wing extremist	0.405***	0.286	-0.681***	-1.163**
	(0.109)	(0.455)	(0.222)	(0.513)
Right-wing extremist	-0.166	-1.577***	-0.688***	-1.601*
	(0.111)	(0.341)	(0.198)	(0.842)
Inverse index media freedom	0.0725***	0.334***	0.0184**	0.0150
	(0.0105)	(0.109)	(0.00903)	(0.0238)
HH index of media concentration	-0.0758	-0.423	-0.206***	-0.699**
	(0.0527)	(0.306)	(0.0646)	(0.346)
Winner-takes-all system	-0.631***	-1.420	0.556***	1.692
	(0.187)	(1.078)	(0.146)	(1.287)
Threshold for representation	0.0220	0.262	-0.0870***	-0.218
	(0.0296)	(0.180)	(0.0276)	(0.163)
Herfindahl index of opposition parties	-3.573***	-22.91***	-1.788***	-5.016
	(0.359)	(7.530)	(0.452)	(3.751)
Mean district magnitude	-0.00914***	-0.0444***	-0.00199*	-0.00537
	(0.00147)	(0.0150)	(0.00111)	(0.00385)
Log Likelihood	-2571.80	-3686.16	-4097.83	-5485.69
Observations	4946	4946	8229	8229
Pseudo R^2	0.0736		0.0584	
Percentage of correct predictions	75.41	82.11	85	94.85

Note. Dependent variable is whether the individual would vote for a "sure loser party" in a general election. All regression include age, gender, size of urban area, employment and marital status dummies. Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table A1.1. Description of variables

Variable Name	Description	Sources
	Dependent variables	
Abstain	Dummy variable taking value 1 if the individual would not vote or cast a blank vote in a general election and 0 if votes	World Values Survey (2000)
Communicative Voting	Dummy variable taking value 1 if the individual would vote for a sure loser party in a general election and 0 if she would vote for a likely winner party.	World Values Survey (2000) and Koole and Katz (2000)
	Socio-Economic Characteristics	
Middle level of education	Dummy variable taking value 1 if the individual highest education attainment is high school, 0 otherwise	World Values Survey (2000)
High level of education	Dummy variable taking value 1 if the individual has attended a university-level course, 0 otherwise	World Values Survey (2000)
Middle-high level of income	Dummy variable taking value 1 if household has an income level between 7 and 8 in a 10 point scale (10 being the highest), 0 otherwise.	World Values Survey (2000)
High level of income	Dummy variable taking value 1 if household has an income level higher or equal to 9 in a 10 point scale (10 being the highest), 0 otherwise.	World Values Survey (2000)
	Individual Preferences and Level of Information	
Good opinion about political system of the country	Dummy variable taking value 1 if individual rates the political system of his country above 5 in a 10 point scale (10 being the highest), 0 otherwise.	World Values Survey (2000)
Believe politics is important	Dummy variable taking value 1 if the individual consider politics to be very important or rather important in her life, 0 otherwise.	World Values Survey (2000)
Uninformed about politics	Dummy variable taking value 1 if the individual follows politics in the news less than once a week, 0 otherwise	World Values Survey (2000)
Moderate or independent	Dummy variable taking value 1 if the individual is moderate (ideological position of the individual within 0.5 points of the median of the left-right political space) or does not have a policy position on the left-right political space (independent), 0 otherwise	World Values Survey (2000)
Moderate or independent * uninformed	Interaction term taking value 1 if individual is at the same time uninformed about politics AND moderate or independent, 0 otherwise	World Values Survey (2000)
Left-wing extremist	Dummy variable taking value 1 if individual political position is below 3 in a 10 point scale (1 being extreme left, 10 being extreme right)	World Values Survey (2000)
Right-wing extremist	Dummy variable taking value 1 if individual political position is above 8 in a 10 point scale (1 being extreme left, 10 being extreme right)	World Values Survey (2000)

Table A1.1. Description of variables (2)

Variable Name	Description	Sources
	Choice Set	
Closer to a "sure loser party" party (CSLP)	Dummy variable taking value 1 if the ideologically closest party to an individual is a "sure loser" and 0 if it is a "likely winner" party.	World Values Survey (2000); Koole and Katz (2000) and Marks and Steenbergen (1999)
	Media Characteristics in the Country where the Individual Votes	
Inverse index of media Freedom	Index of media freedom of the country: higher index corresponds to a lower level of media freedom	The Freedom House (2004)
HH index of media Concentration	Hirschman-Herfindahl index of concentration of the media industry	Sanchez-Tabernero (2004)
	Institutional Characteristics of Political System of the Country where the Individual Votes	
Winner-takes-all	In "plurality" systems, legislators are elected using a winner-takes-all or first-past-the-post rule. "1" if this system is used, 0 if it is not.	DPI 2004, World Bank (2004)
Threshold for representation	Records the minimum vote share that a party must obtain in order to take at least one seat in PR systems.	DPI 2004, World Bank (2004)
Herfindahl index of opposition parties	The sum of the squared seat shares of all parties in the opposition.	DPI 2004, World Bank (2004)
Mean district magnitude	The weighted average of the number of representatives elected for a given size of electoral district.	DPI 2004, World Bank (2004)

Table A1.2. Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Dependent Variables					
Abstentionist	16555	0.2042	0.4031	0	1
Vote for a "sure loser" party	13175	0.1865	0.3895	0	1
Age					
18 to 29	16555	0.2180	0.4129	0	1
30 to 49	16555	0.3874	0.4872	0	1
50 to 69	16555	0.2884	0.4530	0	1
Size of Urban Area where individual lives					
Medium size town	16555	0.3493	0.4768	0	1
Large urban area	16555	0.3443	0.4752	0	1
Marital Status					
Married	16555	0.5731	0.4946	0	1
Divorced	16555	0.0628	0.2425	0	1
Separated	16555	0.0188	0.1360	0	1
Widowed	16555	0.0775	0.2674	0	1
Employment Status					
Full-time dependent	16555	0.3810	0.4857	0	1
Part-time dependent	16555	0.0838	0.2771	0	1
Self employed	16555	0.0594	0.2365	0	1
Retired	16555	0.2089	0.4066	0	1
Housewife	16555	0.1163	0.3206	0	1
Student	16555	0.0685	0.2526	0	1
Socio-Economic Characteristics					
Middle level of education	16555	0.3636	0.4810	0	1
High level of education	16555	0.2174	0.4125	0	1
Middle-high level of income	16555	0.1517	0.3587	0	1
High level of income	16555	0.0887	0.2844	0	1
Percentage of women	16555	0.5347	0.4988	0	1
Individual preferences and level of information					
Good opinion about political system of the country	16555	0.4680	0.4990	0	1
Believe politics is important	16555	0.3672	0.4821	0	1
Uninformed about politics	16555	0.1886	0.3912	0	1
Moderate	16556	0.4034	0.4906	0	1
Independent	16557	0.1017	0.3023	0	1
Moderate or independent	16555	0.5050	0.5000	0	1
Moderate or independent * uninformed	16555	0.1265	0.3325	0	1
Left-wing extremist	16555	0.0724	0.2591	0	1
Right-wing extremist	16555	0.1514	0.3585	0	1
Closer to a "sure loser" party (*CSLP*)	16555	0.3903	0.4878	0	1
Media and Institutional Characteristics					
Inverse index of media freedom	16555	17.6234	6.9511	9	30
HH index of media concentration	16555	2.8520	0.7354	1.677	4.143
Winner-takes-all system	16555	0.4970	0.5000	0	1
Threshold for representation	16555	2.4022	2.0098	0	5
Herfindahl index opposition parties	16555	0.4914	0.1367	0.27089	0.711889
Mean district magnitude	16555	16.5461	34.0512	1	150

Table A2.1. Small-Hsiao test for the IIA assumption - Multinomial logit - Whole sample

Ho: Odds(Outcome-J vs Outcome-K) are independent of other alternatives							
Omitted	lnL(full)	lnL(omit)	chi2	df	P>chi2	evidence	
Abstention	-3068.03	-2857.361	421.337	53	0.000	against	Ho
Communicative voting	-3328.598	-3137.55	382.095	53	0.000	against	Ho

Note. Regression includes age, gender, occupation, marital status, size of urban area, media market and institutional characteristics dummies

Table A2.2. Small-Hsiao test for the IIA assumption - Multinomial logit - Subsample of voters closer to a sure loser party (*CSLP*)

Ho: Odds(Outcome-J vs Outcome-K) are independent of other alternatives							
Omitted	lnL(full)	lnL(omit)	chi2	df	P>chi2	evidence	
Abstention	-1309.75	-1284.024	51.451	52	0.495	for	Ho
Strategic voting	-1326.92	-1269.235	115.235	52	0.000	against	Ho

Note. Regression includes age, gender, occupation, marital status, size of urban area, media market and institutional characteristics dummies

Table A2.3. Small-Hsiao test for the IIA assumption - Multinomial logit - Subsample of voters closer to a likely winner party (*CLWP*)

Ho: Odds(Outcome-J vs Outcome-K) are independent of other alternatives							
Omitted	lnL(full)	lnL(omit)	chi2	df	P>chi2	evidence	
Abstention	-1657.857	-1544.289	227.137	52	0.000	against	Ho
Strategic voting	-2021.963	-1918.923	206.079	52	0.000	against	Ho

Note. Regression includes age, gender, occupation, marital status, size of urban area, media market and institutional characteristics dummies

Table A3.1. Estimates of Abstention - Robustness checks on the test on the *swing voter's curse* : alternative definitions of *swing* and uninformed voters

	Robustness Check A		Robustness Check B	
	SL	NL	SL	NL
Uninformed about politics	0.582***	0.719***		
(less than once a week)	(0.0684)	(0.0968)		
Independent	1.438***	1.475***		
	(0.0886)	(0.116)		
Independent * uninformed	-0.499***	-0.488***		
	(0.142)	(0.142)		
Uninformed about politics			0.344***	0.537***
(less than several times a week)			(0.0983)	(0.116)
Moderate or independent			1.012***	0.981***
			(0.0647)	(0.0651)
Moderate or independent *			0.0156	-0.0452
uninformed			(0.115)	(0.115)
Log Likelihood	-7126.50	-9301.70	-7085.34	-9267.02
Observations	16555	16555	16555	16555
Pseudo R^2	0.12		0.129	
Percentage of correct predictions	80.92	94.44	80.49	94.92

Note. Dependent variable is whether the individual would not vote in a general election. All regression include age, gender, size of urban area, educational level, income level, employment and marital status, media market and institutional characteristics dummies. Robust standard errors are in parenthesis

*** p<0.01, ** p<0.05, * p<0.1

Table A3.2. Moderate or independent voters who are uninformed

	Baseline Specification		Robustness Check A of the *Swing voter's curse*		Robustness Check B of the *Swing voter's curse*	
	Informed	Uniformed	Informed	Uniformed	Informed	Uniformed
Number	6266	2095	973	710	5272	3089
Percentage	74.94	25.06	57.81	42.19	63.05	36.95

Table A4.1. Abstention and Communicative Voting - Subsample of countries with low turnout discrepancy

	Abstention		Communicative Voting	
	(1)	(2)	(3)	(4)
	SL	NL	SL	NL
High level of education	-0.0438	0.158	0.404***	0.785***
	(0.0916)	(0.117)	(0.0972)	(0.299)
High level of income	-0.460***	-0.507***	-0.0659	-0.186
	(0.127)	(0.140)	(0.123)	(0.264)
Good opinion about political system	-0.365***	-0.589***	-0.408***	-0.852***
	(0.0592)	(0.0792)	(0.0636)	(0.249)
Believe politics is important	-0.593***	-0.616***	-0.00157	-0.0882
	(0.0645)	(0.0730)	(0.0646)	(0.146)
Uninformed about politics	0.318**	0.445***	0.236***	0.517**
	(0.128)	(0.143)	(0.0909)	(0.231)
Moderate or independent	1.017***	0.987***		
	(0.0661)	(0.0660)		
Moderate or independent * uninformed	0.165	0.152		
	(0.147)	(0.146)		
Left-wing extremist			0.156	0.181
			(0.0981)	(0.195)
Right-wing extremist			-0.332***	-1.078***
			(0.0977)	(0.372)
Closer to sure loser party	0.149***	0.417***	0.635***	1.334***
	(0.0571)	(0.0904)	(0.0689)	(0.357)
Inverse index media freedom	0.0438***	0.0711***	0.0680***	0.116***
	(0.00887)	(0.0124)	(0.0104)	(0.0350)
HH index of media concentration	-0.272***	-0.439***	-0.215***	-0.594***
	(0.0480)	(0.0670)	(0.0528)	(0.180)
Winner-takes-all system	-0.0132	-0.195	-0.282	-0.769*
	(0.161)	(0.173)	(0.175)	(0.434)
Threshold for representation	0.184***	0.214***	0.00797	0.124*
	(0.0358)	(0.0369)	(0.0370)	(0.0727)
Herfindal index of opposition parties	-1.300***	-2.560***	-3.027***	-6.279***
	(0.425)	(0.582)	(0.519)	(1.810)
Mean district magnitude	-0.0194	-0.0296*	-0.0135	-0.0771*
	(0.0154)	(0.0163)	(0.0171)	(0.0409)
Log Likelihood	-5308.70	-6329.96	-4383.54	-6329.96
Observations	11761	11761	9162	9162
Pseudo R^2	0.127		0.0700	
Percentage of correct predictions	79.40	93.84	79.22	88.10

Note. Dependent variable in (1) and (2) is whether the individual would not vote in a general election. Dependent variable in (3) and (4) is whether individual would vote for a "sure loser party" in a general election. All regression include age, gender, size of urban area, employment and marital status dummies. Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table A4.2. Communicative Voting - Subsample of countries with both extreme left and extreme right loser parties

	Communicative Voting	
	SL	NL
High level of education	0.0414	1.304***
	(0.107)	(0.346)
High level of income	-0.228	-0.638
	(0.161)	(0.444)
Good opinion about the political system	-0.588***	-1.887***
	(0.0776)	(0.276)
Believe politics is important	-0.0428	-0.0705
	(0.0786)	(0.226)
Uninformed about politics	0.305***	0.984***
	(0.109)	(0.302)
Left-wing extremist	0.516***	0.206
	(0.118)	(0.283)
Right-wing extremist	-0.455***	-1.962***
	(0.135)	(0.287)
Closer to sure loser party	0.490***	2.660***
	(0.0915)	(0.299)
Inverse index media freedom	0.0150	0.122***
	(0.0103)	(0.0261)
HH index of media concentration	-0.169***	-0.423***
	(0.0454)	(0.143)
Winner-takes-all system	0.261	1.189**
	(0.174)	(0.535)
Threshold for representation	-0.0849***	-0.109
	(0.0303)	(0.0836)
Herfindahl index opposition parties	2.012***	-13.71***
	(0.693)	(1.686)
Mean district magnitude	-0.000772	-0.0194***
	(0.00120)	(0.00390)
Log Likelihood	-3201.17	-9258.44
Observations	7019	7019
Pseudo R^2	0.0827	
Percentage of correct predictions	79.84	90.44

Note. Dependent variable is whether individual would vote for a "sure loser party" in a general election. All regression include age, gender, size of urban area, employment and marital status dummies. Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1