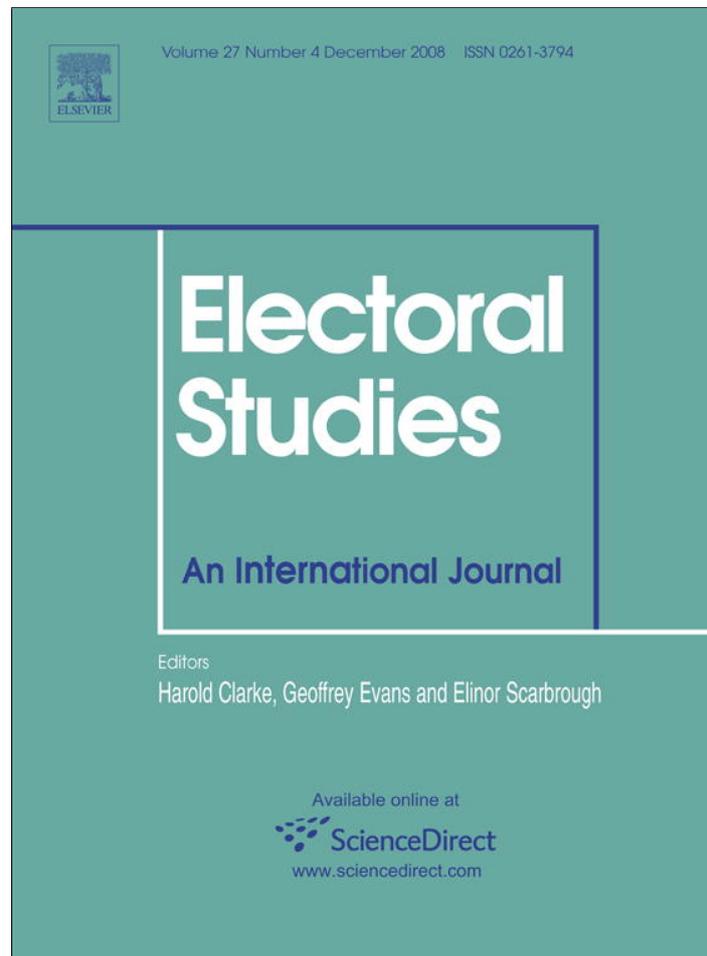


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Competition & turnout: the majority run-off as a natural experiment

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A B S T R A C T

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Run-off elections offer certain advantages for the study of political behavior over other electoral systems. This paper exploits the fact that run-off elections resemble a natural experiment to study the effects of competitiveness on voter turnout. The literature offers several explanations of the determinants of voter turnout. In run-off elections most of these factors can be assumed to be constant between the two ballots. Run-off elections, thus, provide an opportunity to evaluate the insights offered by rational choice theories of voter turnout. The results of the first ballot inform voters about the competitiveness of the race, which influences their propensity to vote on the second ballot. I derive several hypotheses about voter turnout in multi-candidate run-off elections from a simple theoretical framework and test them using data on the French legislative elections of 1997 and 2002. The results indicate competitiveness has a strong effect on voter turnout.

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Political scientists have long sought to understand the determinants of voter turnout. The right to vote is widely seen as a minimal requirement of democratic governance but the fact that many citizens forgo the opportunity to exercise their right has raised questions about the causes and consequences of voter turnout.

Voter turnout is also interesting from a theoretical point of view as the paradox of voting has played a significant role in the debate about the merits of rational choice theory within the discipline – in large part due to the perceived inability of rational choice theories to explain voter turnout. The findings presented here offer a slightly different, perhaps conciliatory, view suggesting that it may be beneficial to consider the insights offered by rational choice theories along with alternative theories of voter turnout.

One of the main implications of the rational choice model is that turnout should be influenced by the closeness of the electoral contest (Riker and Ordeshook, 1968). Yet,

a number of recent studies, e.g., Denver (1995), Kuncze (2001), Matsusaka and Palda (1999), and Pattie and Johnston (1998), conclude that closeness does not have a significant effect on turnout. The findings of Helin and Nurmi (2004) are mixed. Geys (2006) surveys the literature and finds that approximately 69% of the articles reviewed support the closeness hypothesis. Blais (2000) argues similarly that the evidence favors the closeness hypothesis but that the effect is small. In sum, the existing empirical evidence on the closeness hypothesis is perhaps best described as mixed but slightly in favor of the hypothesis. However, as Glazer and Grofman (1992) and Grofman et al. (1995) have pointed out, it is possible that the strength of the relationship is underestimated because of methodological issues.¹

In this article I take advantage of the fact that run-off elections offer something akin to a natural experiment that provides an opportunity to test hypotheses regarding

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¹ For example, most studies compare turnout across different voting populations (constituencies) rather than turnout across elections within the same voting population but as Grofman (1993) points out, rational choice theory provides predictions about the latter.

electoral competition and turnout.² In contrast with the mixed results in the literature, the evidence presented below demonstrates that competitiveness explains a significant proportion of the change in turnout between the two rounds of majority run-off elections. The implication of these findings is that competitiveness should routinely be included as an independent variable in studies of voter turnout and that the failure to do so risks omitted variable bias.

The methodological advantage of studying turnout in run-off elections lies in the fact that the two rounds of the election involve the same electorate.³ We can, therefore, infer that the numerous factors hypothesized to influence voter turnout are, more or less, held constant between the two rounds of the election. The relevant socioeconomic characteristics of the voters, as well as most other factors likely to influence turnout, will predominantly be the same in the first and second rounds of the contest. It is in this respect that the run-off is like a natural experiment where only the competitiveness of the race varies between the two ballots. However, as the voters learn the results of the first ballot, their perceptions of the competitiveness of the contest change. Thus, if the closeness of the contest impacts voter turnout, change in turnout between the two ballots should vary with the competitiveness of the race.

An additional benefit to studying majority run-off elections is that they provide a convenient solution to a common problem in studies of voter turnout and closeness, i.e., how to obtain reliable measures of closeness. In his review of the literature, Geys (2006) reports that as much as 70% of the studies obtain their measures of closeness by consulting the results of the election under study, which raises concerns about endogeneity. In absence of constituency-level polling, the alternative is to use results of the previous election, which in most instances are several years old. Both problems are avoided when studying run-off systems. The first round results offer a measure of competitiveness that avoids the issue of endogeneity and provides reliable information about the closeness of the race, especially if the time between the ballots is brief.⁴

² Hanks and Grofman (1998) have pointed out the advantage of studying relative turnout in primaries and general elections for similar reasons. Lassen (2005) is another recent example that makes use of a natural experiment to test theories of voter turnout. Lassen (2005) finds that being informed increases the likelihood of casting a vote.

³ The run-off is a class of electoral systems that is characterized by involving more than one round of voting. Indridason (2008) proposes a three-fold classification scheme for run-off systems. First, the *number of ballots* (n) specifies the maximum number of rounds of voting. Most run-off systems involve two rounds of voting but systems with three rounds of voting were not uncommon in the early 20th century. Second, the *winning requirement* specifies when a candidate is elected. The most common form of the run-off requires a candidate to win a majority of the vote on the first (or pre- n th) ballot but in some cases a plurality of 40 or 45% is sufficient (Shugart and Carey, 1992). Finally, the *threshold requirement* specifies the vote share or rank the candidate must obtain to advance onto the second ballot. To accommodate systems such as the instant run-off, where the voters only go to the polls once, one could add *ballot timing* – although one might argue that such systems are quite different from the more usual forms of the run-off.

⁴ The implications of the length of time between ballots are considered below.

I begin by briefly reviewing Riker and Ordeshook's (1968) calculus of voting and deriving from it several hypotheses about voter turnout in majority run-off elections. In the following section, I then provide information about the French party system in order to place the hypotheses in the context of French legislative run-off elections. The hypotheses are then tested using constituency-level data from the 1997 and 2002 French legislative elections.

1. The calculus of voting (a second time)

Few would argue that the basic rational choice model explains voter turnout – even Riker and Ordeshook (1968) interpreted their results to mean that we must look elsewhere to explain the levels of turnout we observe. Although this article builds explicitly on Riker and Ordeshook's (1968) model, its aim is not to argue that it is *the model* of turnout. Rather it is to argue that electoral competition is one of the determinants of voter turnout and it should, therefore, be a component of our theories of turnout. Riker and Ordeshook's (1968) model is simply a convenient and a useful vehicle for generating hypotheses about the effect of competitiveness on voter turnout.

Even though the basic model doesn't explain the level turnout as such, it identifies factors that influence the voters' decision to turn out to vote. This is a non-trivial distinction. Most theories, formal or not, do not offer predictions of the *exact* levels (or point predictions) of particular behavior or outcomes but predictions about the effects of a change in one variable on another.⁵ Of course, a theory offering exact point predictions is preferable to a theory that does not but, by and large, such predictions are not feasible for a wide range of political phenomena.

Formal theories of voter turnout can, therefore, provide insights into why citizens vote or not by identifying factors that influence the citizens' decision even though they fail to explain the *level* of voter turnout.⁶ Riker and Ordeshook (1968) calculus of voting stipulates, for example, that the likelihood of influencing the outcome of the election will influence the citizens' propensity to vote. Therefore, voter turnout should be higher where elections are more competitive. While other factors may be responsible for sustaining turnout at

⁵ For example, Przeworski and Limongi (1997) present a theory about the positive effect of economic development on democratic development but the theory does not predict at what *level* of economic development transition to (or collapse of) democracy should occur. Rather, they offer predictions about the effect of a change in economic development on democratic development, that is, comparative statics. In other words, predictions generally concern marginal effects. Grofman (1993) makes a similar argument, as well as Franklin et al. (2001).

⁶ As Riker and Ordeshook (1968) point out, it is easy to modify the model to account for the level of voter turnout, i.e., by adding a 'civic duty' term into the calculus of voting. As is widely recognized, adding 'civic duty' is at best an *ad hoc* explanation and, therefore, doesn't really advance our understanding of the determinants of voter turnout. However, whether 'civic duty' or factors identified by other scholars drive voter turnout to the relatively high levels observed is not of great significance for our present purposes because the focus here is on the change in voter turnout between the two ballots, which allows us to control for these factors.

relatively high levels, factors such as the cost and the expected benefit of voting influence turnout as well.⁷

Riker and Ordeshook's (1968) model has primarily been examined in the context of plurality elections involving contests between two parties. But as Duverger (1954) noted, run-off systems have a propensity to inflate the number of candidates competing for office. The presence of two ballots reduces the urgency of ideological similar parties to coordinate on a single candidate and, in effect, these systems sometimes function as primaries. Similarly, minor candidates are encouraged to run for office as the chances that their candidacy has an adverse effect on the eventual outcome are reduced. The extent to which these incentives are in place depends on the specific rules governing which parties advance onto the run-off ballot. Running a separate candidate may be a riskier proposition in systems in which only the top two candidate advance onto the second ballot than in systems, such as in France and Hungary, where the qualifying threshold is some minimum vote share.

Taking account of these differences allows us to derive several hypotheses from Riker and Ordeshook's (1968) framework in addition to the familiar closeness hypotheses. For example, uncertainty about how the supporters of unsuccessful candidates will cast their votes on the second ballot does not imply that the model cannot be employed. Rather, the uncertainty influences the voters' evaluation of their likelihood of being pivotal and, if competitiveness influences turnout, the level of turnout should vary with the degree of uncertainty about vote transfers. Thus, uncertainty about vote transfers gives rise to additional hypotheses about turnout as we shall see.

Riker and Ordeshook (1968) model the citizen's decision to vote as a comparison of the expected benefits and costs of voting. The decision to vote is based on whether the following inequality is satisfied:

$$pB_i + D_i \geq C_i \quad (1)$$

where p denotes the probability of citizen i 's vote being pivotal, B_i denotes i 's benefit of having his favored candidate elected, D_i is the citizen's sense of "civic duty" (or other factors influencing his decision), and C_i represents his cost of voting. Only if inequality (1) is satisfied, i.e., the expected benefit of voting outweighs the cost of voting, does the citizen go to the polls.

The question is how the first ballot results, i.e., what the citizen learns from the results, influences his calculus. The first ballot result, first and foremost, influences the citizen's estimate of how probable it is that his vote will determine the outcome of the election, i.e., his *pivot probability* (p). The pivot probability, other things equal, is increasing in the closeness of the contest between the candidates on the second ballot. How informative the first ballot results are depends not only on the successful candidates' vote

shares but also on the vote shares of other candidates and, in particular, on expectations about patterns of vote transfers. In some instances, as when the electoral competition is characterized by blocs of parties, such as in France, the structure of the party system provides information about how voters of unsuccessful parties are likely to vote on the second ballot. Even in the absence of clearly defined blocs of parties, ideological factors provide a reasonable guide about how voters transfer their votes, especially if the unsuccessful parties tend to be more extreme than the parties that advance onto the second ballot. In other instances, e.g., in primary elections in the southern states of the United States, factors such as race may provide information about vote transfers.⁸ Glaser (1996) discussion of the 1993 special election in the second district of Mississippi suggests both that race may be a good predictor of vote transfers and that the perceived closeness of the qualifying candidates, based on the first ballot results, induced voters to turn out in greater numbers.

However, when the number of salient issues and parties is high, the first ballot results may provide limited information. In those circumstances voters face greater uncertainty and can only take the vote shares of the candidates that advance as their cue. The lower the vote share of the advancing candidates, the greater the uncertainty and the lower the voter's probability of being pivotal. Thus, holding the closeness of the advancing candidates constant (in close races), as the advancing candidates' share of the vote decreases the less likely a citizen is to turn out to vote.⁹

Turnout on the second ballot may also be influenced by the "civic duty" term in expression (1). For example, the strong showing of an extremist party may influence the citizen's sense of civic duty though this effect is likely to be attenuated for the simple reason that extremist candidates tend not to be sufficiently strong to be serious contenders. However, where extremist candidates manage to advance onto the second ballot, "civic duty" may compel moderate voters to show up in greater numbers and extremist voters, who might otherwise have stayed home, may turn out to vote. The presence of an extremist candidate on the second ballot would presumably also alter the magnitude of the benefit of having one's favored candidate win, i.e., a left voter is likely to prefer a center right candidate to a right extremist. Note, however, that these effects are likely to be offset by the fact that races that involve an extremist will tend to be uncompetitive.¹⁰

⁸ Canon (1999, p. 118), e.g., writes "Race serves as a filter through which subjective assessments of the electoral context are made". Though Canon (1999) does not use the term 'vote transfers' in his study of majority black districts, his argument clearly rests on the idea that vote transfers occur primarily along racial lines.

⁹ Note that the effect of uncertainty is the opposite in an uncompetitive race. No uncertainty about the parties' votes shares paired with an uncompetitive race implies that outcome is all but given. The outcome of the election becomes uncertain as the uncertainty about the parties' vote shares increases and, hence, the probability of being pivotal must increase.

¹⁰ That is, the race between the two front-runners will tend to be uncompetitive because the presence of an extremist party presents voters with a coordination problem.

⁷ Franklin (2004) makes a similar point, if perhaps stronger, arguing that a theory of voter turnout must include some component of rational decision making even though other factors, such as socialization, play an important role.

Expressing (1) as a function of extremism and closeness we obtain:

$$p(\text{closeness}, \text{EX})B_i(\text{EX}) + D_i(\text{EX}) \geq C_i \quad (2)$$

where EX refers to whether an extremist candidate advanced onto the second ballot or not. Following the argument above, each function on the left hand side take a greater value when an extremist candidate is present on the second ballot.

The hypothesis with regard to the pivot probability is straightforward. Other things equal, the closer the contest between the two leading candidates, the higher the probability of each citizen's vote being decisive. Consequently, more citizens will find it worthwhile to vote and turnout increases. In addition, turnout should decline faster as the candidates' support becomes increasingly unequal because the probability of casting a pivotal vote becomes increasingly smaller the less competitive the election.

Hypothesis 1. *The closer the total expected vote for the (top) two qualifying candidates based on the first ballot results, the higher the voter turnout on the second ballot. In addition, turnout declines more rapidly as the distance between the candidates widens.*

It is slightly more difficult to quantify the closeness of the contest when more than two candidates qualify for the second ballot (as some electoral systems permit). However, there are strong incentives for ideologically similar candidates to coordinate their actions on the second round in multi-candidate races – much like under plurality rule elections in single member districts. On the second ballot, ideologically similar candidates risk splitting their share of the vote and thereby allowing an opposing candidate lacking majority support to carry the election. It is, therefore, not surprising that parties, or candidates, act to solve potential coordination problems. In both France and Hungary, the two main examples of electoral systems employing vote thresholds, it is common for a candidate to 'step back' in order to increase the chance of an ideologically similar party carrying the district (Benoit, 2001; Blais and Indridason, 2007).¹¹ Thus, there is a tendency for this problem to take care of itself. When that is not the case, the most straightforward measure of the competitiveness of the contest is the difference in vote shares of the two leading parties.

The presence of candidates that don't have close ties with either of the major candidates on the first ballot are also likely to influence the citizens' decisions. The voter faces greater uncertainty about the competitiveness of the race when independent or regional candidates receive a sizable share of the first ballot vote. It can be argued that in the presence of such uncertainty the voter will be more likely to vote. Consider a second ballot contest between two candidates that belong to clearly defined party blocs. Suppose the parties' expected vote shares favor the left candidate. Assume that all the candidates on the first ballot can easily be identified with either the left or the right bloc. In these circumstances the probability of

casting a decisive vote is relatively low because the first ballot result provides a relatively accurate picture of the expected outcome. That is, if left bloc candidates receive 52% of the vote on the first ballot while right bloc candidates receive 48% then the left bloc has a high probability of winning on the second ballot, i.e., the only uncertainty about the outcome concerns whether the voters within each bloc will transfer their votes to the bloc's qualifying candidate.¹²

Now, suppose instead that there are a number of 'independent' candidates that garner perhaps 30% of the vote, each of whose voters may have come from either side of the political spectrum. Now the lead of the candidate that emerged stronger on the first ballot offers less guarantee that the lead will be maintained after the 'independent' voters make up their minds about who to vote for on the second ballot.¹³ Thus, uncertainty about vote transfers increases the likelihood of the voter being pivotal.¹⁴

Hypothesis 2. *The greater the support of 'independent'/regional candidates whose support cannot easily be identified as right or leftist, the greater the voter turnout.*

The identity of the parties that qualify for the second ballot is also likely to influence the behavior of the citizens. This applies in particular to the instances in which an extremist candidate makes it onto the second ballot. The effect of an extremist qualifying is somewhat complex and depends on the distribution of support between the parties in the constituency. While an extremist candidate may be sufficiently strong to qualify for the second ballot, he is unlikely to be able to attract voters in droves from the more moderate candidates. The presence of an extremist on the second ballot thus, to some extent indicates that the contest is unlikely to be close. Thus, other things equal, we would expect the citizens' incentive to vote to drop where an extreme candidate has qualified and turnout to decline. Nevertheless, the stronger the candidate is, the greater the threat it poses, and consequently voter turnout should also be expected to increase with the extremist candidate's vote share.

Hypothesis 3. *If an extremist candidate is present on the second ballot then voter turnout decreases.*

¹² In other words, the variance of the distribution of outcomes on the second ballot is small. Grunberg (2000) examines vote transfers between the first and second ballots in the 1997 legislative elections. Grunberg (2000, p. 125, Table 5.4) estimates, e.g., that only 5% of Communist voters and 14% of Green voters didn't vote for a left candidate on the second ballot after their candidate had been eliminated. Similarly, Grunberg and Schweisguth (2003) find that only 1% of moderate left voters and only 5% would not vote for the Socialists under any circumstances.

¹³ It is also possible that, with their most preferred candidate eliminated, 'independent' voters will choose to stay home. 'Independent' voters have been defined here as voters that cast their votes for candidates that cannot clearly be affiliated with the left or the right bloc. Thus, being an 'independent' voter does not imply indifference over the candidates that advance onto the second ballot.

¹⁴ The above argument is similar to Myerson (2000). A counterargument should be noted. If the contest is expected to be very close an increase in the uncertainty about the result would reduce the likelihood of being pivotal. A more accurate description of the effect of 'independent' candidates on turnout might, therefore, posit an interaction between the closeness of the race and the degree of uncertainty.

¹¹ Sometimes, as in the case of the Socialists and Communists in France, a formal agreement is made before the election.

Hypothesis 4. *The greater the vote share of an extremist candidate, the greater the voter turnout when the candidate has qualified for second ballot.*

The presence of an extremist candidate also influences how the voters evaluate the more moderate parties' chances of winning in three-candidate races. Consider a three-way race between a left party, a moderate right party, and an extreme right party. In these circumstances the closeness of the race doesn't depend on the comparison between the support of the left and the right blocs.¹⁵ Rather, the closeness depends on the relative support of the left bloc and the moderate right. This observation allows us to refine **Hypothesis 1**. In the presence of a right extremist, the voter turnout increases as the margin between the left candidate and the moderate right candidate decreases. Hypotheses regarding the presence of a left extremist (or alternative issue dimensions) can be formulated in an analogous manner.

Hypothesis 5. *The greater the closeness between the left candidate and the moderate right candidate in three-candidate races involving an extreme right candidate, the higher the voter turnout.*

The size of the constituency has clear implications for a citizen's decision to vote. The likelihood of being pivotal decreases as the constituency becomes more populous, and consequently, the expected benefit of voting on the second ballot is smaller. Thus, fewer voters will find it worth their while to turn out to vote and turnout is expected to decline.

Hypothesis 6. *The more populous the constituency, the lower the voter turnout.*

Some voters may be alienated from the main parties, opting to cast a 'protest' vote for minor parties or candidates. Generally, elections under majority run-off systems offer ample opportunities for voters to cast such votes. Majority run-off systems have been noted for their propensity to encourage minor candidates to run on the first ballot. A great majority of these candidates does not make it onto the second ballot. Their presence on the first ballot may, however, increase voter turnout on the first ballot because of these candidates' appeal to 'protest voters'. On the second ballot some of these voters may opt to abstain, resulting in a relatively lower turnout on the second ballot.

Hypothesis 7. *The higher the number of candidates on the first ballot the lower the turnout on the second ballot relative to the first ballot.*

In a similar manner, the number of candidates on the second ballot should induce those voters who like to cast

a protest, or an expressive, vote, to turn out in greater numbers.

Hypothesis 8. *The higher the number of candidates on the second ballot the greater the turnout on the second ballot relative to the first ballot.*

I now turn to testing the above hypotheses.

2. Turnout in French legislative elections

Legislative elections in France provide a good opportunity to test the above hypotheses for several reasons. First, the French electoral system is a majority run-off system with a threshold requirement of 12.5% that applies to the number of registered voters, which in practice means that a party must garner approximately 18.8% of the vote to advance onto the second ballot on average.¹⁶ Thus, it is not unusual that three parties advance onto the second ballot, which provides an opportunity to test **Hypotheses 3–5**.

Second, if there is no majority winner on the first ballot, the second ballot takes place only a week after the first round of the election. The short span of time between the two ballots means that it can safely be assumed that there are no significant changes in the socioeconomic characteristics of the electorate, in its sense of civic duty, or even in the distribution of preferences. In other words, the only thing that changes from the first ballot to the second are parameters related to the electoral contest itself and the citizens' beliefs about the viability of the candidates. That is, if turnout in some constituency is relatively high on the first ballot because its electorate is highly educated or exceptionally civic-minded then turnout should be high in that constituency on the second ballot as well. Changes in turnout between the two ballots can only be driven by factors related to the competitiveness of the contest in addition to random factors.¹⁷

The competitiveness of the contest, as **Rosenstone and Hansen (1993)** argue, may influence the behavior of candidates as well as the behavior of voters. Candidates are likely to put more effort into mobilization in close races, which in turn should increase turnout. However, if the time between the two ballots is short, there is little time for an effective mobilization campaign and mobilization will play a negligible role. In France, where a mere week separates the two ballots, it is reasonable to assume that inter-ballot mobilization has limited importance – especially when French parties face expenditures ceilings and bans on commercial advertising during the electoral campaign (**Palda and Palda, 1998**).¹⁸ There is also the question how mobilization works. Mobilization may affect turnout because it increases interest in politics (or civic duty) or, alternatively, because it alerts the electorate to the fact that the election may turn

¹⁵ If the voters acted strategically and successfully coordinated their actions the presence of a third candidate would naturally have no impact. However, it appears that extremists are often ready to vote for their party for expressive purposes despite the possibility of achieving a subpar outcome. For example, a large majority of National Front voters appears to ignore the strategic incentives to vote for the moderate right parties on the second ballot.

¹⁶ The average constituency-level turnout on the first ballot in 1997 and 2002 was 66.7%.

¹⁷ Such random factors might include weather conditions on election day or political incidents, e.g., that influence the voters' sense of civic duty.

¹⁸ To save resources for mobilization in the inter-ballot period would appear to be a risky strategy in the absence of the technology to reach large portions of the electorate quickly.

on their vote. The literature is largely silent on this issue but if the causal mechanism is the latter then testing whether voters behave rationally does not require accounting for mobilization efforts.¹⁹

The third advantage of testing the hypotheses in the context of French elections stems from the structure of electoral competition. The French party system is frequently described as bipolar. Operationalizing competitiveness is therefore a relatively straightforward matter. The main parties belonging to the left bloc are the Socialist Party, the Communist Party, and the Greens. The right bloc has traditionally been composed of two main parties, the Gaullist RPR and the Union for French Democracy (UDF). However, before the 2002 election the parties formed an electoral alliance, *Union pour la majorité présidentielle*, which subsequently became a formal political party under the name *Union pour un mouvement populaire* (UMP). The UDF did not join the electoral alliance as a whole and offered its own candidates in several constituencies in 2002. A number of minor candidates also throw their hat in the ring on the first ballot. The average number of candidates per constituency in the elections of 1997 and 2002 was 13 while the effective number of parties was 4.23.²⁰

In most instances two candidates, one from each bloc, advance onto the second ballot. It is reasonable to assume that the total number of votes cast for the parties within each bloc represents the support of the bloc in the electorate. Grunberg (2000) shows, for example, that the great majority of the voters that support the Greens or the Communists on the first ballot cast their votes for the Socialists on the second ballot in those instances where only the Socialists have advanced onto the second ballot. Coordination efforts at the level of the political elite, e.g., the formation of the UMP, also suggest that this assumption is warranted. On the left, the Socialists and the Communists have often made an agreement that stipulates that the candidate receiving fewer votes withdraws if both candidates advance onto the second ballot. The Socialists and the Greens went a step further in 2002, offering a common candidate in 121 constituencies (Blais and Indridason, 2007).

The presence of the National Front on the right of the political spectrum has often caused the moderate right parties a headache. Because of the National Front's extremism the moderate right parties have refused any sort of coordination with the National Front. The National Front has responded in kind and refused to withdraw their candidates from the second ballot in three-candidate races. While the National Front is strong enough to qualify in a number of constituencies it is too extreme to be able to garner a plurality of the vote anywhere. The presence of the National Front may, however, influence the outcome of the election indirectly, as suggested by Hypotheses 4

and 5, because it affects the balance of support of the left and the right blocs.

The above hypotheses are tested using constituency-level electoral results from the 1997 and 2002 French legislative elections. Excluded from the analysis are the non-metropolitan constituencies, constituencies that declared a winner in the first round, and constituencies where two candidates qualified but where one of the candidates subsequently stood down. The remaining data consisted of 1034 observations. Each observation contains information about the vote share of each candidate in each round of the election as well as constituency-level variables such as the number of candidates on each ballot.

The dependent variable is the change in turnout between the first and the second ballots. I consider two specifications of the dependent variable. First, I examine the change in percentage turnout between the two ballots. Table 1 shows the average turnout on the first and second ballots, the average change in turnout, and the standard deviation of the change. While the average change in turnout between the two ballots is modest the standard deviation of the change indicates that there is considerable variance in the change in turnout across constituencies. Second, I consider the change in the number of voters (in thousands) between the two ballots. Both operationalizations of the dependent variable are reasonable and the results, as we shall see, are substantively the same under both specifications.²¹

The primary independent variable is the competitiveness of the election, which I measure as the MARGIN of the leading bloc on the first ballot. In constructing the variable, each of the parties fielding candidates in 1997 and 2002 was identified as either a left party, a right party, or an independent party. MARGIN is calculated by taking the absolute value of the difference between the total vote share of all the left parties and the total vote share of all the right parties as in Cox and Munger (1989). Formally, $MARGIN = |\sum_{i \in L} V_i - \sum_{i \in R} V_i|$.²² The variable NF CANDIDATE takes the value 1 if a National Front candidate was present on the second ballot and 0 else. As the National Front support is hypothesized to influence voter turnout when the National Front qualifies for the second ballot I interact National Front vote with NF CANDIDATE to create the variable NF VOTE \times NF CANDIDATE. The variable INDEPENDENT VOTE is the aggregate vote share of candidates that could neither be identified as a left nor a right candidate. The variables NO. OF CANDIDATES (first) and NO. OF CANDIDATES (second) represent the number of candidates

¹⁹ This argument is only relevant if the goal is to test whether voters behave rationally but it does not imply that mobilization efforts are unimportant.

²⁰ All the data used in this article were obtained from the websites of the French National Assembly (<http://www.assemblee-nat.fr/>) and the Ministry of the Interior (http://www.interieur.gouv.fr/sections/a_votre_service/elections). The data is available at (<http://www.politicaldata.org>).

²¹ Alternatively, the turnout (actual or percentage) could be treated as the dependent variable with the first ballot turnout entering the right hand side of the regression equation as a control for other determinants of voter turnout. In substantive terms, the results don't depend on the operationalization of the dependent variable. The results presented here have the advantage of showing clearly how much of the change in turnout is explained by competitiveness.

²² Note that this operationalization of closeness derives from Hypothesis 1 rather than Hypothesis 5. Defining closeness as the closeness between the left and the moderate right, rather than the right, yields similar results when the regression result contain controls for the presence of a National Front candidate and his vote share.

Table 1
Average turnout

Year	Turnout			Standard deviation
	First ballot (%)	Second ballot (%)	Change (%)	
1997	68.3	71.3	3.1	3.5
2002	65.0	60.7	-4.3	3.1
1997 & 2002	66.7	66.2	-0.5	5.0

on the first ballot and second ballot. REGISTERED VOTERS measures the size of the constituency. Finally, an indicator variable for the election year, ELECTION YEAR: 2002, is included in the analysis. ELECTION YEAR: 2002 takes the value 0 in the 1997 election and 1 in the 2002 election.

A preliminary look at the data, shown in Fig. 1, suggests a fairly clear negative relationship between change in turnout and the margin of the contest when the 1997 and the 2002 elections are considered together although there is quite a bit of variance in change in turnout. However, when each election is considered separately it becomes evident that the observations from each year are clustered far closer together. It is also interesting to note that the estimated regression lines (also shown in the figure) for each election show a very similar relationship. This suggests that there were some fundamental differences between the two elections although the effects of competitiveness were highly similar. One reason why it is important to account for election year in the analysis is that, for most voters, the second ballot of the 2002 legislative election represented the fourth opportunity to go to the polls within the span of 2 months. Thus, a part of the difference in turnout between the elections can probably be attributed to 'voter fatigue'.

A factor that was also likely to be explained the difference between the two elections is the fact that the competitiveness of a contest does not depend only on constituency-level competitiveness. Rather, each constituency-level contest is a part of a national contest for control of the government. Thus, the voters' incentive to turnout to vote may be lower if the first ballot of the election has all but

Table 2
Vote share on first ballot

Year	Left bloc	Right bloc	Independents	NF
1997	45.11% (8.66)	53.26% (8.33)	1.62% (2.33)	15.27 (5.63)
2002	40.35% (9.36)	55.90% (9.53)	3.75% (3.22)	11.34 (4.77)
1997 & 2002	42.71% (9.32)	54.60% (9.05)	2.69% (3.01)	13.29% (5.57)

Numbers in parentheses are standard errors. Right bloc includes National Front vote.

decided the outcome of the national contest. Tables 2 and 3 suggest that this was indeed the case. Table 2 provides information about the vote shares of the left and the right blocs on the first ballot, along with the vote shares of independents and the National Front. The stronger position of the right bloc in 2002 is evident. The total vote of the right bloc increases slightly between the two elections but, more importantly, the vote share of the National Front fell substantially. The stronger position of the moderate right in 2002 was compounded by the fact that the moderate right managed to coordinate their candidacies in most constituencies before the election. This is also reflected in Table 3, which show that there were nearly a 100 fewer three-way races in 2002. The weaker position of the National Front accounts for much of this change although the effort to coordinate also appears to have paid off. It is also interesting to note that almost all of the second ballot races involving a National Front candidate were three-way contests. In sum, the contest at the national level appears to have been far less competitive in 2002 than in 1997. Simple comparison of the vote shares of the left and the right blocs suggests this but the vote share alone doesn't reveal the coordination problems the right faced in 1997, which made the election far more competitive.²³

The effects of covariates on change in turnout were estimated using ordinary least squares regression.²⁴ Table 4 displays the estimation results for the change in voter turnout in percentage point. Table 5 repeats the analysis for the alternative specification of the dependent variable, i.e., the change in the number of voters that turnout. The results are highly similar substantively and I will confine my discussion primarily to Table 4.

The first thing to note is that the results support the great majority of the hypotheses with a high degree of significance. The fully specified regression accounts for a substantial share of the variance in the change in turnout between the two ballots ($R^2 = 0.85$).

The competitiveness of the election has the predicted effect, indicating that voter turnout is higher when the race is close. In substantive terms, turnout decreases by 0.40% as the competitiveness of the election goes from a 0 to a 5% margin and by 0.85% as the competitiveness changes from a 0 to a 10% margin. These effects may appear small but it is important to keep things in perspective. The

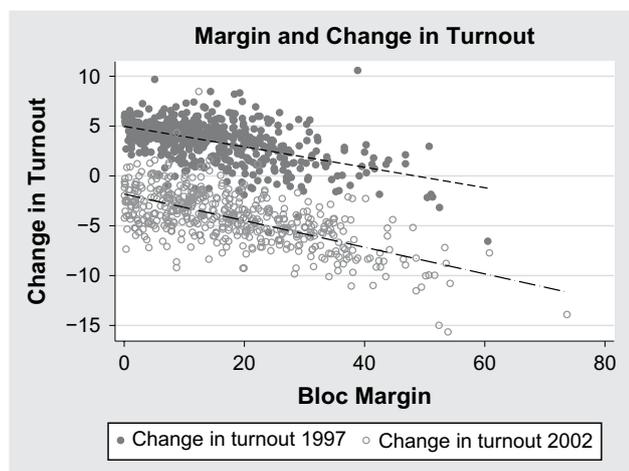


Fig. 1. The effect of margin on change in turnout.

²³ Indeed, the Socialists emerged as the victors of the 1997 election.

²⁴ The reported standard errors are those obtained from the ordinary least squares estimation. The Huber–White robust standard errors were also calculated but they do not alter the interpretation of the results in any way.

Table 3
Second ballot contests

Year	Candidates on second ballot				
	1	2	3	NF	2 + NF ^a
1997	12	457	133	79	76
2002	3	488	37	10	9
1997 & 2002	15	945	170	89	85

^a 2 + NF = three-candidate contest including a National Front candidate.

dependent variable is the change in turnout between the two ballots that on average equals -0.5% with a standard deviation of 4.97% . Thus, in accounting for the change in turnout, the closeness of the race has a substantial effect.

Interpreting the significance of the effect of competitiveness on voter turnout requires considering the significance of the marginal effect of MARGIN on voter turnout rather than simply the OLS estimates of the standard errors for the variables MARGIN and MARGIN². Because MARGIN enters the estimation equation as a quadratic term it is necessary to calculate the standard error of the marginal effect for the same reasons this must be done for model containing interaction effects.²⁵ It is easy to verify that the marginal effect of MARGIN equals $\beta_{\text{MARGIN}} + 2\beta_{\text{MARGIN}^2} \text{MARGIN}$. The standard error of the marginal effect then equals:²⁶

$$\left(\text{var}(\beta_{\text{MARGIN}}) + 4 \text{MARGIN}^2 \text{var}(\beta_{\text{MARGIN}^2}) + 4 \text{MARGIN cov}(\beta_{\text{MARGIN}}, \beta_{\text{MARGIN}^2}) \right)^{1/2} \quad (3)$$

Graphing the marginal effect along with its confidence interval is a simple way to gauge whether the effect is significant as both the marginal effect of MARGIN and its standard error vary with the magnitude of MARGIN. Fig. 2 graphs the marginal effect from the full specification of the model. As the figure shows, the change in competitiveness does have a statistically significant effect on turnout. The marginal effect is decreasing, indicating that as the race becomes less competitive the greater the marginal effect of a further decrease in competitiveness. That is, there is strong evidence supporting Hypothesis 1.

Turning to Hypothesis 6, the results for the two specifications of the dependent variable appear at first sight to paint a very different picture. In Table 4 the size of the constituency, REGISTERED VOTERS, fails to reach statistical significance although the coefficients' signs are in line with the hypothesized relationship. In Table 5 where the dependent variable is the change in the number of voters the coefficients are,

however, highly significant. Constituency size, therefore, does not appear to influence turnout in proportional terms although more voters tend to stay home in the larger constituencies. Strictly speaking, the theoretical expectation is that there will be a proportional reduction in turnout so the hypothesis cannot be considered confirmed.²⁷

The expectations about the effect of the National Front on turnout Hypotheses (3 and 4) are borne out by the data. Both the coefficients for the presence of a National Front candidate and the National Front vote share (on the first ballot) when the candidate qualifies for the second ballot are significant at the 99% level. Brambor et al. (2006) argue that it is important to include both (all) constituent terms in regression models containing interaction terms. While the omission of a constituent term from the model can cause biased estimates, the decision should nevertheless be guided by the theory that is being examined. The National Front vote is not included for this reason in the models estimated here because the importance of the National Front stems from the possibility of splitting the right vote on the second ballot. Since this cannot occur when the National Front fails to qualify for the second ballot there is no theoretical reason to believe that the National Front vote would influence turnout in those circumstances. It is, of course, reasonable to examine whether the theoretical expectations stand up to test. As it turns out, if the models are estimated including National Front vote, the estimated coefficient for the vote share of the National Front is not statistically significant at the 95% level, the other coefficients are virtually identical, and all the substantive conclusions remain unaltered.

The presence of a weak National Front candidate on the second ballot decreases turnout by as much as 3.2% points (see Fig. 3). The attenuating effect on turnout decreases as the National Front candidate becomes stronger. Sufficiently strong National Front candidates have a positive effect on voter turnout on the second ballot. As argued above, there are two reasons why this relationship is observed. First, the National Front is only likely to qualify for the second ballot where the right is strong. A substantial National Front support is, therefore, also likely to signal a substantial lead by the mainstream right bloc candidate over the left bloc. Second, it is only as the National Front's support increases that the risk of splitting the right vote increases the "competitiveness" of the election, opening up a window of opportunity for the left bloc.²⁸

The effect of INDEPENDENT VOTE is statistically significant when the dependent variable is defined as the percentage point change in voter turnout but not when it is defined as the change in the number of voters. An increase

²⁵ For correct interpretation of interaction effects and the calculation of the standard errors of the marginal effects of their constituent terms see, e.g., Friedrich (1982) and Brambor et al. (2006).

²⁶ To see that this is the standard error of the marginal effect consider the model $y = \alpha + \beta_1 x + \beta_2 x^2$. The marginal effect on y with respect to x can be found by differentiating with respect to x : $\partial y / \partial x = \beta_1 + 2\beta_2 x$. Taking the variance of the marginal effect, and applying the basic rules of variance and covariance calculations, we obtain: $\text{var}(\beta_1 + 2\beta_2 x) = \text{var}(\beta_1) + \text{var}(2\beta_2 x) + 2\text{cov}(\beta_1, 2\beta_2 x) = \text{var}(\beta_1) + 4x^2 \text{var}(\beta_2) + 4xcov(\beta_1, \beta_2)$.

²⁷ If the size of the constituency is allowed to have a different effect in the two elections it is statistically significant in 1997 but not in 2002. While I am hesitant to interpret this as support for the hypothesis it does suggest that rejecting it outright might be premature.

²⁸ Hypothesis 5 captures this logic. The empirical test of the hypothesis defines the competitiveness of the election as the difference between the left bloc and moderate right bloc, i.e., the vote share of the right bloc less the National Front vote. The results, not presented here, support the hypothesis and are in substantive terms identical to the results presented here. The results are available upon request from the author.

Table 4
Effect of competitiveness on change in percentage turnout

Dependent variable (%)				
Second ballot turnout – first ballot turnout				
	1	2	3	4
Constant	4.7754*** (0.1481)	4.7006*** (0.3321)	4.7359*** (0.3309)	–1.8846*** (0.6455)
Margin	–0.057*** (0.0144)	–0.0585*** (0.0143)	–0.0579*** (0.0142)	–0.0766*** (0.0132)
Margin ²	–0.0013*** (0.0003)	–0.0014*** (0.0003)	–0.0014*** (0.0003)	–0.0007*** (0.0003)
Registered voters/10,000		–0.0014 (0.0448)	–0.0233 (0.0452)	–0.042 (0.0417)
NF candidate		–4.0788*** (1.0117)	–4.0696*** (1.0074)	–6.1694*** (0.9377)
NF vote × NF candidate		0.1969*** (0.0444)	0.1972*** (0.0442)	0.2116*** (0.0406)
Independent vote			0.066*** (0.0209)	0.082*** (0.0194)
No. of candidates (first)				–0.0413** (0.0165)
No. of candidates (second)				3.5832*** (0.2625)
Election year: 2002	–7.2657*** (0.1211)	–7.1499*** (0.1258)	–7.2857*** (0.1324)	–7.0507*** (0.1359)
Observations	1034	1034	1034	1034
R ²	0.8215	0.8256	0.8272	0.8547
F Statistic	1580.489	810.1534	701.8861	669.3484

Levels of significance: ***99%, **95%, *90%.

in the vote of regional/independent parties by one standard deviation, 3%, is predicted to increase voter turnout by as much as 0.25% points. Apart from speaking to [Hypothesis 2](#), the finding is interesting because one might have expected independent voters to turn out to vote on the first ballot but stay home on the second ballot when their candidate has been eliminated from the race.

The number of candidates on the first and the second ballots has the hypothesized effect on voter turnout. A high number of candidates on the first ballot results in a lower turnout on the second ballot. The hypothesized reason is that voting has an expressive element, i.e., that voters may derive some utility from casting a vote for their most preferred candidate regardless of the candidate's change of winning. As most candidates are eliminated after the first ballot this incentive to vote is absent on the second ballot causing turnout decline between the ballots. For a similar reason, the number of candidates on the second ballot has a positive effect on voter turnout. The effect of the number of candidates on the second ballot is substantially greater than that on the first ballot for the reason that to reach the second ballot candidates must have a sizable following – whereas on the first ballot most of the candidates have very limited support. The presence of a third candidate, other than a Front National candidate, on the second ballot increases turnout on the second ballot by 3.5% points.²⁹

Finally, the dummy for the election year has a substantial effect on the change in turnout between the two ballots. The estimates indicate that the change in turnout was more than seven percentage points higher in 1997 than in 2002. The large effect of the election year variable raises the question whether the high explanatory power of the model derives primarily from this one variable. While it is certainly true that controlling for election year increases R² substantially it remains impressively large when

analysis is conducted for the 2 years separately or the variable is dropped from the model. If a separate regression is run for each year R² is around 50% for the full specification of the model when the dependent variable is change in percentage turnout and around 65% when the change in the number of voters is considered. The explained variance when the election year dummy is dropped from the pooled model are, respectively, 47 and 56%.³⁰

In the aggregate, the findings are consistent with the theory and give a clear indication that the level of competitiveness influences voter turnout. It also supports a number of additional hypotheses that were derived from [Riker and Ordeshook \(1968\)](#) model for majority run-off contests. The results are also highly robust. Here I have considered two different measures of changes in voter turnout that lead to substantively the same conclusions. Different measures of competitiveness can be considered, as mentioned above, but these lead to the same substantive conclusions about the effects of competitiveness. In short, the evidence suggests that competitiveness matters.

3. Conclusions

Above I have sought to demonstrate how run-off systems offer a unique opportunity to examine how competitiveness affects voter turnout. I have argued that focusing on run-off elections resembles employing an experimental research design in certain respects. Although studying run-off elections does not allow randomly assigned treatment, the short time that elapses between the two ballots ensures that a number of alternative explanatory variables, e.g., 'civic duty', socialization, and education, are held constant thus offering an effective way to control for their influence.

²⁹ As shown in [Table 3](#) there are very few cases where the third candidate is not a National Front candidate.

³⁰ The results are largely the same when the two elections are analyzed separately. In particular, the results regarding the competitiveness of the election are unaltered. However, the effect of the vote share of independent candidates does not appear to have a significant effect in 1997 while the effect is significant at the 99% level in 2002. The results are available upon request from the author.

Table 5

Effect of competitiveness on the number of voters

Dependent variable				
No. of voters on second ballot – no. of voters on first ballot				
	1	2	3	4
Constant	2.8335*** (0.151)	4.4734*** (0.3343)	4.4657*** (0.3345)	-5.738*** (0.5565)
Margin	-0.044*** (0.0147)	-0.0371*** (0.0144)	-0.0372*** (0.0144)	-0.0672*** (0.0113)
Margin ²	-0.0014*** (0.0003)	-0.0014*** (0.0003)	-0.0014*** (0.0003)	-0.0004* (0.0002)
Registered voters/10,000		-0.2376*** (0.0451)	-0.2327*** (0.0457)	-0.2657*** (0.036)
NF candidate		-3.8064*** (1.0183)	-3.8084*** (1.0186)	-7.0956*** (0.8084)
NF vote × NF candidate		0.1475*** (0.0447)	0.1474*** (0.0447)	0.1701*** (0.035)
Independent vote			-0.0144 (0.0212)	0.0128 (0.0167)
No. of candidates (first)				-0.0785*** (0.0142)
No. of candidates (second)				5.6188*** (0.2263)
Election year: 2002	-5.2298*** (0.1234)	-5.235*** (0.1266)	-5.2051*** (0.1339)	-4.7867*** (0.1172)
Observations	1034	1034	1034	1034
R ²	0.7157	0.729	0.7292	0.8344
F Statistic	864.1133	460.524	394.5988	573.2329

However, voters learn about the competitiveness of the election following the first ballot, which allows an opportunity to assess the impact of competitiveness on voter turnout.

The results of this study indicate that voters pay attention to the result of the first ballot and that they factor them into their decision to cast a vote on the second ballot, i.e., the competitiveness of the elections has a significant impact on voter turnout. Where the results of the first ballot indicate that the left and the right blocs are evenly balanced, voters turn out in greater numbers than where one of the blocs has a comfortable margin. The results also suggest that the voters respond to the possibility of coordination failure. When a candidate of a third party, such as the National Front, is present on the second ballot voters turn out in greater numbers if a third party has the potential to tip the balance between the moderate right and the left in the favor of the left bloc.

While the results suggest that the voters' rational calculations of the costs and benefits of voting influence their decision, this should not be taken to imply that other

theories of turnout are redundant. Rather, the results make clear that the simple calculus of voting provides useful, and empirically valid, predictions about voter turnout. Though rational choice theories generally fail to explain the extent of voter turnout these results suggest that rather than treating rational choice theories as an alternative to other theories of voter turnout that emphasize civic duty, socialization, etc., it may be useful to treat the theories as complementing one another.

Rational choice theories of voter turnout have often been cited as an example of how rational choice theories offer limited insights into political phenomena (e.g., Green and Shapiro, 1994). In this paper I have argued that such claims are exaggerated and that even one of the simplest model of voter turnout does provide important insights into the factors driving turnout. Applying Riker and Ordeshook (1968) calculus of voting to majority run-off elections offers several hypotheses about changes in voter turnout and strong support is found for nearly all of the hypotheses.

The findings reported here suggest that the citizens' decision whether to vote or not does contain a rational

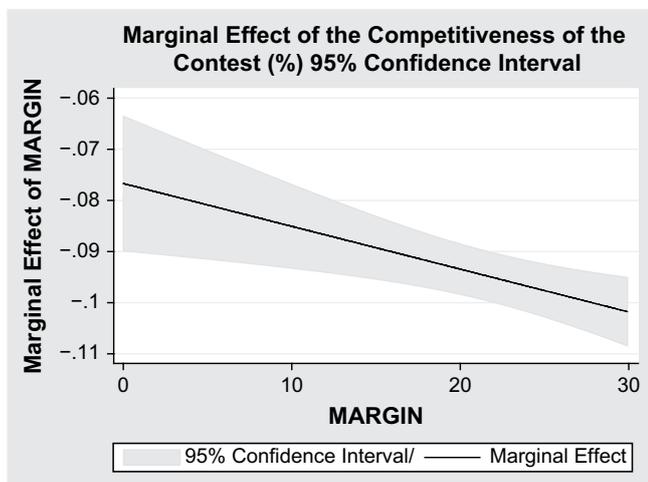


Fig. 2. Marginal effect of the competitiveness of the contest (%).

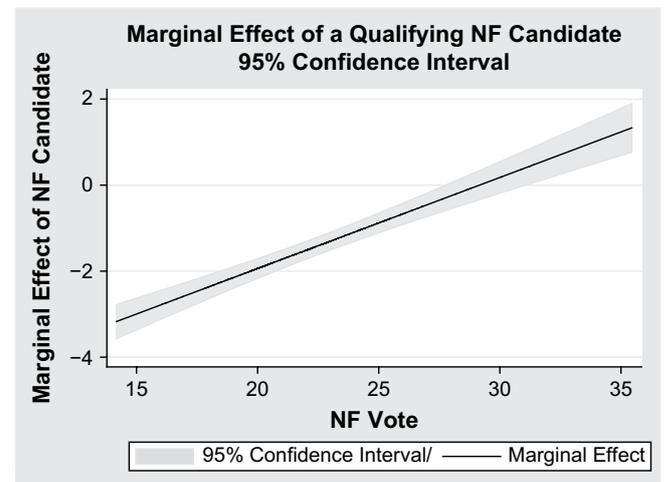


Fig. 3. Marginal effect of a qualifying NF candidate.

component, i.e., voters take into account the likelihood that their vote will make a difference. In recent years formal theorists, perhaps taking their cue from the existing empirical results emphasizing “non-rational” explanations of voter turnout, have shifted their focus to the social, or group, foundations of voter turnout that build on Harsanyi's (1980) work on rule-utilitarianism. Feddersen and Sandroni (2002) and Coate and Conlin (2004) are recent examples of models of voter turnout that build on the idea that citizens form their decisions whether to vote or not on the basis aggregate utility of the group they belong to as well as the costs they incur by voting. Others, e.g., Amaro-de-Matos and Barros (2003), have focused more explicitly on the role of social interactions in generating high levels of voter turnout. These papers represent a approach to the study of voter turnout that has the promise of combining the insights offered by the various existing theories as well as enhancing our understanding of the social determinants, e.g., social norms and civic duty, of voter turnout.

As a more general point, this article demonstrates how majority run-off elections present an opportunity to answer questions that are difficult to answer in different contexts. There is, thus, an argument to be made that run-off systems deserve greater attention in the literature. Run-off elections offer a great opportunity to observe how voters and, in some instances, candidates coordinate their actions in response to what they learn from the results of the first ballot. Studying run-off systems may allow us to get at questions that are not easily addressed in the context of other electoral systems. Naturally, similar opportunities may present themselves under other electoral systems, for example, when extensive polling takes place. However, even in the most favorable circumstances such polls involve at best several thousand respondents and are usually conducted at the national, rather than the constituency, level. The information provided by the first ballot results of a run-off election should far surpass that provided by any poll.

Run-off systems offer a great opportunity to study a variety of other phenomena because elections under run-off systems typically provide richer information about the electoral contest. Furthermore, the actors must make use of that information within a relatively narrow time frame, which provides an opportunity to examine how the candidates and the voters react to changed circumstances. Run-off systems, e.g., offer a good opportunity to study issues of voter and candidate coordination as well as electoral alliances. Blais and Indridason (2007), e.g., study electoral alliances in the 2002 French legislative election. There are few instances in which it is possible to obtain data as relevant to these actors' decisions as in run-off elections.

From a substantive point of view there are also good grounds for paying greater attention to run-off systems. The run-off is most frequently identified with its use in presidential elections in addition to legislative elections in France and primary elections in the United States.³¹

The run-off is, however, used to elect, solely or in part, over 20 legislatures around the world.³² In addition, the majority run-off is frequently employed for local elections, for election of legislative officials, for party leadership selection, and seems to be a popular choice among numerous clubs and organization.³³

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³¹ The use of the run-off in the United States is not restricted to primary elections at the federal level. The run-off is, e.g., used in general elections in Louisiana and special House elections in Mississippi.

³² Not all the countries can be considered democratic. The countries were run-offs are used for legislative elections include Albania, Bahrain, Belarus, the Comoros Islands, Cote d'Ivoire, the Central African Republic, Congo, the Czech Republic (Senate), Cuba, Egypt, France, Gabon, Georgia, Haiti, Hungary, Iran, Kiribati, Kyrgyzstan, Macedonia, Mali, Mauritania, Monaco, Montserrat, North Korea, Serbia and Montenegro, the United States (general elections in Louisiana), Togo, and Uzbekistan. In addition, run-off systems have been used in Armenia, Bulgaria, Lebanon, Lithuania, and the Ukraine.

³³ In addition, elections preceded by primary elections undeniably share some of the characteristics of the run-off, i.e., much like the first round of the run-off primary elections involve the selection of the candidates that participate in the final round of the contest.

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