

Notes and Comments

Barriers to Participation, Voter Sophistication and Candidate Spending Choices in US Senate Elections

JENNIFER VAN HEERDE, MARTIN JOHNSON AND SHAUN BOWLER*

Costs associated with voting affect an individual's willingness to turn out for an election as well as aggregate rates of voting across political jurisdictions.¹ Barriers to participation also skew the social and economic composition of electorates.² In this Research Note, we suggest that the costs of participation affect candidate behaviour as well – the strategic purposes of their appeals to voters and the media they choose to deliver messages. Why? By making the trip to the ballot box more or less difficult, electoral laws select voters with respectively less or more interest in and thus knowledge of politics. Given the systematic variations in how people with different levels of political knowledge learn during a campaign, we anticipate that election laws ultimately influence the communication tools that candidates use.

We propose that the costs of voting have a compositional effect on electorates: as voting becomes increasingly difficult, the average level of political knowledge and interest among voters should decrease. This is not due to a micro-level effect in which registration laws somehow make individual voters smarter or better informed. Institutionally imposed costs simply affect who can and will vote. For a brief example, if one state charged its citizens £50 to vote while another paid its citizens £50 at their polling site, we would expect quite sizeable differences in turnout and composition of the electorate across the two states. The main contribution of this note, however, is our recognition that campaigns adapt to these differences in systematic ways. Real world differences in the cost of voting are not as great as these financial disparities, but the idea is the same: costs borne by individuals will have selection effects that produce different types of electorates and prompt different campaign styles by candidates.

This Note proceeds in four sections. First, we review scholarship on the relationship between voting costs and the size and composition of the electorate. Secondly, we elaborate expectations about the consequences of this for the choices candidates make about how to deliver their campaign appeals. Then, using public opinion data from the American states and candidate spending data for US Senate elections during the late 1980s and early 1990s, we find that registration and voting rules affect the composition of the electorate *and* the behaviour of candidates. Finally, we discuss implications of these findings.

* Van Heerde: Department of Political Science, University College London; Johnson and Bowler: Department of Political Science, University of California, Riverside. The order of the authors' names is reverse alphabetical and is not intended to connote principal authorship. The data used in this article are available from the authors by contacting Martin Johnson, martin.johnson@ucr.edu.

¹ See Glenn Mitchell and Christopher Wlezien, 'The Impact of Legal Constraints on Voter Registration, Turnout and the Composition of the American Electorate', *Political Behavior*, 17 (1995), 179–202; and G. Bingham Powell Jr, 'American Voter Turnout in Comparative Perspective', *American Political Science Review*, 80 (1986), 17–43.

² Robert A. Jackson, Robert D. Brown and Gerald C. Wright, 'Registration, Turnout, and the Electoral Representativeness of US State Electorates', *American Politics Quarterly*, 26 (1998), 259–82.

VOTING COSTS, TURNOUT AND THE COMPOSITION OF STATE ELECTORATES

Registering to vote is the 'preliminary hurdle' to electoral participation.³ Since Merriam and Gosnell examined registration and voting in the United States, a number of studies have revisited this relationship.⁴ As registration becomes more difficult and the costs of voting rise, turnout decreases. The registration closing date, which defines the length of time between the end of a state's voter registration period and the day of the next election, has a durable influence on voting. Reducing the number of days between the close of registration and the election makes voting easier.⁵ The adoption of election day registration across the United States could increase national turnout by about 4 percentage points.⁶

Scholars are also interested in the impact voting costs have on the demographic skew of those who turn out. Wolfinger and Rosenstone and others anticipate that changing the costs of voting affects the turnout of potential voters most sensitive to costs.⁷ They argue that poorer, less educated and ethnic minority segments of the American electorate are disproportionately deterred from voting by registration difficulty.⁸ Particular attention has been given to the impact of registration laws on potential voters of varying levels of formal education. Among political scientists, conventional wisdom has been that restrictive registration requirements dissuade less educated persons from registering more than individuals with more education, producing a better-educated electorate in states with costlier registration.⁹ However, many have found that registration laws have a more modest effect on the level of education in an electorate.¹⁰

We are more interested in how the attitudinal political characteristics of electorates are affected by voting costs because, as we argue, these effects have consequences for candidates' strategic choices. Educational differences notwithstanding, potential voters who are interested in politics should be more willing to endure the costs of registering and, ultimately, vote more readily than those with less interest in politics.¹¹ When costs are low, those who are less interested and less motivated might be willing to take part in politics because it is simply easier to take part. Mitchell and Wlezien, for example, document the effect of liberalizing electoral requirements on the level of political interest among voters.¹² They show that by removing registration closing dates, not purging voter lists of the names of infrequent voters and increasing absentee voting opportunities,

³ Jackson *et al.*, 'Registration, Turnout, and the Electoral Representativeness of US State Electorates', p. 281.

⁴ See Charles E. Merriam and Harold F. Gosnell, *Non-Voting: Causes and Methods of Control* (Chicago, Ill.: University of Chicago Press, 1924); Craig L. Brians and Bernard Grofman, 'Election Day Registration's Effect on U.S. Voter Turnout', *Social Science Quarterly*, 82 (2001), 170–83; Jan Leighley and Jonathan Nagler, 'Socioeconomic Class Bias in Turnout 1964–1988: The Voters Remain the Same', *American Political Science Review*, 86 (1992), 725–36; Mitchell and Wlezien, 'The Impact of Legal Constraints'; Richard Timpone, 'Structure, Behavior, and Voter Turnout in the United States', *American Political Science Review*, 92 (1998), 145–72; Raymond Wolfinger and Stephen Rosenstone, *Who Votes?* (New Haven, Conn.: Yale University Press, 1980).

⁵ Wolfinger and Rosenstone, *Who Votes?*

⁶ The 1993 US National Voter Registration Act (NVRA), created opportunities for registration at state Departments of Motor Vehicles and by mail, but did not affect registration deadlines. See Brians and Grofman, 'Election Day Registration's Effect on U.S. Voter Turnout'; and Mitchell and Wlezien, 'The Impact of Legal Constraints'.

⁷ Wolfinger and Rosenstone, *Who Votes?*

⁸ Jackson *et al.*, 'Registration, Turnout, and the Electoral Representativeness of U.S. State Electorates'; and Jae-On Kim, John R. Petrocik and Stephen N. Enokson, 'Voter Turnout among the American States: Systemic and Individual Components', *American Political Science Review*, 69 (1975), 358–79.

⁹ Wolfinger and Rosenstone, *Who Votes?*

¹⁰ Brians and Grofman, 'Election Day Registration's Effect on U.S. Voter Turnout'; Mitchell and Wlezien, 'The Impact of Legal Constraints'; and Jonathan Nagler, 'The Effect of Registration Laws and Education on U.S. Voter Turnout', *American Political Science Review*, 85 (1991), 1293–405.

¹¹ Timpone, 'Structure, Behavior, and Voter Turnout in the United States'.

¹² Mitchell and Wlezien, 'The Impact of Legal Constraints'.

the share of voters with little or no interest in politics would incrementally increase while the share of the voting population much interested would decrease.

Researchers have focused on the relationship between voting costs and interest in politics. However, attendance to politics is more aptly measured by using an individual's knowledge of political actors and governmental institutions rather than by using their self-reported level of education, professed interest in politics or media use.¹³ This implication of electoral laws for the composition of the electorate is relatively easy to support empirically. We expect both to replicate substantively the finding that interest in politics is affected by voting costs, as well as to detect differences in the average registered voter's political knowledge as a function of a state's voter registration requirements.

HYPOTHESIS 1: *On average, voters in states with higher voting costs will be more politically knowledgeable than voters in states with lower barriers to participation.*

IMPLICATIONS OF VOTING COSTS FOR CAMPAIGN STRATEGY AND TECHNIQUES

If this expectation holds and voters in states with costlier voting are more interested and knowledgeable about politics than voters in states with easier registration, why and how would this affect campaign techniques? Students of political communication and persuasion have found that political experts – voters with high levels of knowledge and sophistication – learn about politics differently from novices, those with less political interest and knowledge. Importantly, a voter's political knowledge conditions his or her sensitivity to campaign appeals: 'the likelihood of resisting persuasive communications that are inconsistent with one's political predispositions rises with a person's level of political attentiveness'.¹⁴ Experts are less susceptible to influence from media messages and campaign appeals than novices because more highly knowledgeable people hold more political information in their heads, 'a large storage of political lore'.¹⁵ While experts pay attention to campaigns, given their interest, they are also far less likely to change their minds during these contests than political novices. Novices are more likely to accept the campaign messages they hear, given their relative inexperience.¹⁶

If electorates collectively vary in political knowledge and interest, filtered as a function of electoral laws, candidates should face voting publics with different average levels of susceptibility to campaign influence. We anticipate that candidates in states with lower barriers to voting find themselves playing to an electorate made up of more persuadable (i.e., less knowledgeable) voters. These candidates should be more likely to deploy tools of persuasion, because they are likely to be more effective and represent a better use of the candidate's resources. Similarly, in states with higher barriers to voting and more knowledgeable electors (who are, as a consequence, less persuadable), candidates should focus more of their resources on stimulating turnout among committed partisans.

Some communication tools are better suited to persuading voters than other promotional devices which happen to be better suited to mobilizing voters. Mauser identifies five standard

¹³ Michael Delli Carpini and Scott Keeter, *What Americans Know About Politics and Why It Matters* (New Haven, Conn.: Yale University Press, 1996); Vincent Price and John R. Zaller, 'Who Gets the News? Alternative Measures of News Reception and Their Implications for Research', *Public Opinion Quarterly*, 57 (1993), 133–64; and John R. Zaller, *The Nature and Origins of Mass Opinions* (New York: Cambridge University Press, 1992).

¹⁴ Zaller, *The Nature and Origins of Mass Opinions*, p. 44.

¹⁵ Philip E. Converse, 'Information Flow and the Stability of Partisan Attitudes', *Public Opinion Quarterly*, 26 (1962), 578–99, p. 583.

¹⁶ Charles M. Judd and James W. Downing, 'Political Expertise and the Development of Attitude Consistency', *Social Cognition*, 8 (1990), 104–24; and Zaller, *The Nature and Origins of Mass Opinions*.

communication channels: electronic (television, radio), print (newspapers, magazines, mailed brochures), display (billboards, signs and posters), personal contact (canvassing precincts, rallies) and other media.¹⁷ The properties of each of these types of promotional devices – the number of voters they reach and the potential specificity of the content they provide – are differently suited to a campaign's strategic goals. While television and radio advertisements *can* be designed with stimulating – or suppressing – turnout in mind, many campaign professionals agree broadcast advertising is not an efficient mobilization device and is more useful for persuading large numbers of voters to support a given candidate.¹⁸ Get-out-the-vote (GOTV) campaigns in the United States rely on telemarketing and direct mail.¹⁹

This discussion generally suggests that specific campaign techniques will be more or less useful across different competitive situations and that the choices of candidates in allocating resources should vary by institutional context. Campaigns are interested *both* in mobilizing as well as persuading voters. Candidates employ tools designed to persuade some voters, mobilize others and de-mobilize others still.²⁰ However, candidates in states with lower registration costs should find television and broadcast advertising more useful than candidates in states with higher voting costs.

We think political professionals who run campaigns will be sensitive to differences across states affecting how well different techniques *tend* to work. Agranoff notes, 'resource allocation strategy, like other facets of campaigning, requires information, insight, and judgement applied to a particular situation; campaigners translate premises about the constituency, resources, assets, liabilities, advantages and disadvantages into charting a path or plan'.²¹ There is evidence that suggests spending decisions do reflect differences across knowledge levels. One study of the effectiveness of different advertising mediums finds that, 'uninformed voters who are not especially seeking information learn more from television, while the newspaper covers political content in greater depth and is used by those who are more involved in politics'.²²

Extrapolating from this, in states with less knowledgeable voters due to less costly registration, strategic candidates should be more likely to emphasize mass appeals designed to attract the support of these persuadable electors. Broadcast media are well suited to that task. Candidates in states with higher costs associated with voting and more knowledgeable voters should still find television useful, but just not as useful as it is in other contexts. With less persuadable voters, the strategic goals should shift towards mobilizing committed partisans and call for moving money out of the television budget and into targeted media. Consequently, we expect the institutional context to influence candidate advertising choices:

HYPOTHESIS 2: *Candidates in states with higher registration costs are less reliant on television and broadcast advertising than candidates in states with lower registration costs.*

¹⁷ Gary A. Mauser, 'Marketing and Political Campaigning: Strategies and Limits', in Michael Margolis and Gary A. Mauser, eds, *Manipulating Public Opinion: Essays on Public Opinion as a Dependent Variable* (Pacific Grove, Calif.: Brooks/Cole Publishers, 1983), pp. 19–46.

¹⁸ Darrell M. West, *Air Wars: Television Advertising in Political Campaigns, 1952–1992* (Washington, D.C.: CQ Press, 2001); Tobe Berkovitz, 'Political Media Buying: A Brief Guide' (The Case Program, Kennedy School of Government, Harvard University; President and Fellows of Harvard College) (<http://www.ksg.harvard.edu/case/3pt/berkovitz.html>); and C. Cramer, 'A Step by Step Approach to a Hard-hitting GOTV Plan', *Campaigns and Elections*, 21 (2000), 52–5.

¹⁹ Eva Campbell and Mark P. Campbell, 'Getting the Right Message: The John Peterson for Congress Campaign and Its Use of Direct Mail Advertising', *Campaigns and Elections*, 18 (1997), 29–30.

²⁰ John Theilmann and Alan Wilhite, 'Campaign Tactics and the Decision to Attack', *Journal of Politics*, 60 (1998), 1050–62; and West, *Air Wars*.

²¹ Robert Agranoff, *The Management of Election Campaigns* (Boston, Mass.: Holbrook Press, 1976), p. 155.

²² Dennis E. Kinsey, 'Political Consulting: Bridging the Academic and Practical Perspectives', in Bruce I. Newman, ed., *Handbook of Political Marketing* (Thousand Oaks, Calif.: Sage Publications, 1999), pp. 119–20.

LINKING VOTING COSTS, THE SOPHISTICATION OF ELECTORATES AND CANDIDATE STRATEGIC CHOICES

Testing our hypotheses requires data both on the political attributes of voters and the campaign spending choices of candidates. While others (particularly Mitchell and Wlezien) have demonstrated the effect of electoral laws on the level of interest across American state electorates, we revisit this and the question of political knowledge using data from the Senate National Election Study (SNES), conducted during the three federal elections between 1988 and 1992. In order to assess the influence of state election laws on candidate spending priorities, we use data collected by the Campaign Study Group (CSG), a consulting firm specializing in campaign finance research.²³

Institutional Context and the Sophistication of State Electorates

The American National Election Study (ANES) organization conducted the SNES in each state with US Senate contests during 1988, 1990 and 1992.²⁴ The surveys were designed to produce representative samples of each American state, with the state serving as the primary sampling unit for the SNES, unlike most probability surveys of the American public. Consequently, the pooled state-level data from the surveys provide an ‘ideal sample on which to create aggregate-level variables’ – measures of public opinion and properties of state electorates.²⁵

We examine both self-reported interest in politics and political knowledge among voters, identified here as respondents who said they participated in the election nearest their SNES interview.²⁶ While the voting behaviour of respondents was not validated by the ANES for the Senate Election Studies, many researchers find that the ‘substantive conclusions about the factors that influence voting or nonvoting are largely unaffected by the use of validated as opposed to reported voting data’.²⁷ Individuals tend to over-report their political participation but these survey respondents demographically and attitudinally approximate actual voters.²⁸

We investigate two measures of voter sophistication: interest and political knowledge. Interest in politics is measured by asking voters, ‘Some people don’t pay much attention to political campaigns. How about you? Would you say that you were very much interested, somewhat

²³ The Campaign Study Group, now Dwight L. Morris & Associates, cleans Federal Election Commission (FEC) receipt and expenditure reports for greater accuracy. For example, FEC reports may list Eisner, Michael; Michael D. Eisner; and Eisner, Michael D., as separate contributors even though they reflect the same individual. The firm also tallies payments to consultants and vendors.

²⁴ Warren E. Miller, Donald R. Kinder and Steven Rosenstone, *American National Election Study: Pooled Senate Election Study, 1988, 1990, 1992* (computer file). 3rd version. Ann Arbor, Mich.: Inter-University Consortium for Political Studies [producer and distributor], 1999.

²⁵ Bradford S. Jones and Barbara Norrander, ‘The Reliability of Aggregated Public Opinion Measures’, *American Journal of Political Science*, 40 (1996), 295–309, p. 301; Barbara Norrander, ‘Measuring State Public Opinion with the Senate National Election Study’, *State Politics and Policy Quarterly*, 1 (2001), 111–25. The SNES surveys included the question about interest in politics in each of the three years. The average state has 185 potential respondents (with a range of 151–233). The political knowledge items were only asked in the 1992 version of the survey, thus the average state-level sample size for these items is 54 respondents total, with a range of 40–72. We use interest and knowledge measures, two different indicators for the same concept, in part because of the lower samples sizes contributing to the political knowledge scores.

²⁶ SNES investigators asked respondents, ‘In talking to people about elections, we often find that a lot of people were not able to vote because they weren’t registered, they were sick, or they just didn’t have time. How about you? Did you vote in the elections this November?’ The survey also included an item asking respondents whether they were registered to vote. Screening on self-reported registration instead of self-reported voting produces similar results to those reported here.

²⁷ Lee Sigelman, ‘The Nonvoting Voter in Voting Research’, *American Journal of Political Science*, 26 (1982), 47–56, p. 47.

²⁸ Stanley Presser and Michael Traugott, ‘Little White Lies and Social Science Models: Correlated Response Errors in a Panel Study of Voting’, *Public Opinion Quarterly*, 56 (1992), 77–86.

interested, or not much interested?' We then aggregate the percentage of voters in each state who indicated they are very interested in political campaigns. Among voters, this ranges from 35.04 per cent in North Dakota to 58.04 per cent in Connecticut. We measure political knowledge using a 'civics test' style index of correct responses to political questions included in the Senate study instrument in 1992: 'Now we have a set of questions concerning various public figures. We want to see how much information about them gets out to the public from television, newspapers, and the like. The first name is Dan Quayle. What job or political office does he now hold?'²⁹ Other questions asked about the jobs held by Vice President-Elect Al Gore, Speaker of the House Tom Foley and Supreme Court Chief Justice William Rehnquist. After summing the number of questions each respondent answered correctly, we calculate a mean for each state's voters. These range from 1.50 items correct on average among Tennessee voters to 2.24 among New Jersey voters.³⁰

Our first hypothesis posited that costly voting should restrict the composition of the electorate, screening out less sophisticated voters in high-cost states because they are less willing to overcome barriers to participation. We use registration closing date for an indicator of barriers to participation. This is the costs measure with the largest and most durable substantive effects on electorates.³¹ Further, while 'motor voter' legislation has made it easier, voters still must register to vote, in some cases, several weeks prior to a given election.³² As the registration closing date is moved away from election day, the cost of participating rises. We use data collected by Mitchell and Wlezien, who observe registration closing dates ranging from zero (election day registration and no registration requirement) to thirty-two days, indicating the state requires potential voters to register almost 4½ weeks before an election.³³ We code states with election day registration and no registration requirement (as in North Dakota) both as 0 because under both conditions, balloting is much less costly than it is with closing dates multiple days or weeks prior to the election. For example, Knack and White equate the situation in North Dakota (no registration) with conditions in states with established election day registration procedures.³⁴

Even as we hypothesize a role for election laws in affecting the knowledge and interest of state electorates, we also recognize alternative and complementary influences on relative aggregate voter sophistication. Gordon and Segura cast cross-national variation in political sophistication as a function of capabilities and political context.³⁵ They investigate the relative importance of capacity and incentives to invest in political information. Some voters may have greater ability to consume and use political information than others, while voters in some contexts, particularly those facing more pitched political competition, may have an incentive to invest in political information.

In Table 1, we use ordinary least squares regression (OLS) to model aggregate interest in campaigns and political knowledge as a function of voting costs and these alternative explanations. In addition to our closing date measure, we include relative levels of education, as an indicator of

²⁹ Delli Carpini and Keeter, *What Americans Know About Politics and Why It Matters*; Price and Zaller, 'Who Gets the News?'

³⁰ On average, 40.03 per cent of all respondents in a state said they were very interested in campaigns. Among voters, the mean state percentage of very interested respondents was 49.40 per cent ($t = 25.71$, $p < 0.0001$). Similarly, among all respondents in the average state, the average respondent answered 1.79 civics items correctly. Among voters, the average state score was 1.93 correct ($t = 14.82$, $p < 0.0001$).

³¹ Wolfinger and Rosenstone, *Who Votes?* Mitchell and Wlezien, 'The Impact of Legal Constraints on Voter Registration, Turnout and the Composition of the American Electorate'.

³² Stephen Knack and James White, 'Did States' Motor Voter Programs Help the Democrats?' *American Politics Quarterly*, 26 (1998), 344–65.

³³ Glenn Mitchell and Christopher Wlezien, *Voter Registration and Election Laws in the United States, 1972–1992* (computer file) (Ann Arbor, Mich.: Inter-university Consortium for Political Studies [producer and distributor], 1996).

³⁴ Stephen Knack and James White, 'Election-Day Registration and Turnout Inequality', *Political Behavior*, 22 (2000), 29–44.

³⁵ Stacy B. Gordon and Gary M. Segura, 'Cross-National Variation in the Political Sophistication of Individuals: Capability or Choice?' *Journal of Politics*, 59 (1997), 126–47.

TABLE 1 *Closing Date and Political Interest and Knowledge in the Electorate*

	Percentage of voters very interested in campaigns	Political knowledge (civics items correct)
	β (robust s.e.)	β (robust s.e.)
Closing date (no. days from election)	0.173* (0.071)	0.007*** (0.002)
State residents with college degree (%)	0.580* (0.235)	0.027** (0.009)
Party competition†	- 0.187** (0.063)	0.007*** (0.001)
Constant	45.208*** (4.351) $N = 49$	1.159*** (0.124) $N = 48$
	$F_{3,45} = 5.85^{**}$ $R^2 = 0.27$	$F_{3,44} = 18.25^{***}$ $R^2 = 0.48$

Notes: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$. In both models, Louisiana drops out as a case because the state lacks a party competition score. In the second, California drops out as well because no knowledge score can be obtained for the state from the Senate National Election Study data. †See fn.37 for the source of this variable.

the capacities of state electorates, and party competition, to capture voters' incentives to invest in campaign information. We measure education as the percentage of state voters holding a college degree in 1990.³⁶ Party competition is measured using the Holbrook and Van Dunk ratings of state politics.³⁷ We anticipate voters in states with higher costs for participation, voters in states with higher levels of education and those subjected to competitive politics should be more interested in and knowledgeable about politics than voters in states with lower costs, less education and less competition.

In states with costlier voting, voters are more interested in politics on average than in states with less restrictive participation requirements. With each additional day the closing date is scheduled further from the election, approximately 0.17 per cent fewer voters indicate great interest in politics. Moving from a closing date thirty-two days before the election to election day registration, the percentage of voters very interested in politics decreases 5.5 percentage points. Similarly, closing date influences the political knowledge of aggregate voters, controlling for education and the competitive environment. Comparing a state with a closing date thirty-two days before the election to one with election day registration, aggregate knowledge decreases from an aggregate average civics test score of two items correct to an average score of 1.78. This is equivalent to one-fifth of respondents providing an incorrect answer to one additional item, decreasing the state electorate's average score.

Importantly, the effects of voting costs are independent of state educational differences and variation in political competition. As we would expect, these models suggest that as levels of state education increase – the percentage of state residents with a college education – so does political interest and knowledge. Party competition has different effects on knowledge and interest in politics.

³⁶ US Department of Commerce, Bureau of the Census, *Statistical Abstract of the United States* (Washington, D.C.: Department of Commerce, 1999).

³⁷ Thomas M. Holbrook and Emily Van Dunk, 'Electoral Competition and the American States', *American Political Science Review*, 87 (1993), 955–62.

We find that as competition increases knowledge of politics in the electorate increases, but interest in politics decreases. That said, we are far more interested in the relationship between closing date and knowledge and interest in politics, both of which are entirely consistent with previous research and our expectations.

While we see these differences *across* states, are there similar differences between voters and the general public *within* states? Our argument suggests that voters as a group are different from potential voters – the general public – as a function of voting costs. Further, we expect these differences to be exacerbated by barriers to participation. In order to explore these issues, we compute the average state-level demonstrated political knowledge and self-reported interest in politics among voters and separately among all SNES respondents. The average state's average voter answered 1.93 political knowledge questions correctly, while the average respondent (voters and non-voters) answered 1.80. The political knowledge difference between the average state's voters and all of its respondents is significant ($t = 14.82, p < 0.001$). Similarly in the average state, 49.4 per cent of voters said they were very interested in politics, while only 40.0 per cent of all respondents said they are very interested in politics. Again, the average state's voters are significantly more interested than its potential voters ($t = 25.71, p < 0.001$).

We find voters are consistently more politically knowledgeable and interested than all potential voters. However, we also expect that these differences between voters and all respondents should vary with the costs associated with voting. We anticipate that the difference between voters and all respondents on political knowledge and interest are both correlated with our cost indicator, closing date: the more days a voter must be registered to vote before an election, the greater the knowledge and interest gulf between voters and the entire population. We find the difference between the average political knowledge and interest expressed by voters with the scores on the same measures for the general population (voters minus general population). In each state, voters are more knowledgeable about and interested in politics than the general population. Closing date is positively correlated with the gap between voters and the general population in political knowledge ($r = 0.31, p < 0.05$) and interest ($r = 0.40, p < 0.01$). As voting costs rise, the gaps between voters and the pool of potential voters in political knowledge and interest increase as well.

Campaign Techniques and the Cost of Voting: How Do Campaigners Spend Their Money?

But by altering the composition of the electorate, do voting laws prompt candidates to run different kinds of campaigns? To test our expectations about candidate spending choices and the relative importance of persuasion and mobilization techniques, we use data collected by the Campaign Study Group (CSG) during the 1990, 1992 and 1994 US Senate elections. CSG categorized campaign expenditures as overhead, fund raising, polling, advertising, other campaign activity, constituent gifts/entertainment, donations or un-itemized expenses. We recoded this data into two broad categories, promotional and non-promotional expenditures, to demarcate campaign spending that went towards communication with voters (promotional expenditures) and campaign support (non-promotional expenditures). Promotional expenditures are further divided into broadcast advertising (television and radio advertisements) and targeting media (newspaper advertising, direct mail, billboards, journals, and other advertisements).

We analyse data from all competitive races, removing from our analysis three US Senate contests where incumbents ran unopposed.³⁸ There were thirty-two contested races in 1990, thirty-eight contested races in 1992 and thirty-five contested races in 1994 for a total of 105 contested races for the 1990–94 election cycles and 210 cases in total.³⁹ Total expenditures ranged from a low of \$1,000

³⁸ The uncontested seats were up for election in 1990: Thad Cochran (R-MS); Sam Nunn (D-GA); and David Pryor (D-AR). All other elections featured paired contestants for the Senate seat.

³⁹ The number of contested elections exceeds the expected 33–34 for each year due to special elections to fill vacant seats. For example, Dianne Feinstein (D-CA) contested a special election in 1992 and sought re-election in 1994; both of these campaigns are included here.

by Michael Beasley (D-AK) to a high of \$30,125,590 by Michael Huffington (R-CA), with the average campaign expenditure \$3,335,755. The mean promotional budget for these three years of Senate elections was \$1,726,363.

We are interested in the relative importance of television advertising versus targeting, turnout-oriented, campaign techniques. Given the range of campaign settings, however, our task is not quite as simple as comparing how much candidates spent on broadcasting in states with high voting costs with broadcast expenditures in states with lower voting costs. The cost of television advertising varies greatly across states.⁴⁰ Consequently, we employ two indicators intended to capture the importance of television advertising to candidates relative to other expenditure. First, we model the percentage of a candidate's promotional budget allocated to television and radio expenses.⁴¹ This is the amount of money spent on radio and television divided by the total promotional budget. In our data, it ranges from 0 to 99.7 per cent, with a mean of 75.0 per cent. Our second indicator is spending on television and radio advertising per potential voter. This is the campaign's broadcast advertising budget divided by the number of voting eligible residents of their state in the year of the Senate contest.⁴² This ranges from \$0 to \$2.16 dollars per eligible voter with a mean of \$0.55. Because media costs rise with the number of viewers in an area, we think this measure reflects the relative importance of broadcast advertising to candidates across states.

We model the proportion of a candidate's promotional budget spent on broadcast advertising and per voter broadcast spending as a function of voting costs – again using registration closing date as an indicator. As costs placed on voters rise, the candidate's efforts to turn out these increasingly sophisticated voters should rise as well and efforts devoted to broadcast appeals should decrease. As costs decrease, the percentage of a candidate's budget devoted to persuading potential uncommitted voters through television and radio advertising should increase. The amount of money spent on electronic appeals per potential voter should be associated with closing date in a similar way. As voting costs rise, per capita broadcasting expenditures should decrease.

In addition to voting costs, literature on campaigns suggests other correlates of candidate spending patterns. These alternative explanations are not our main concern here, but we want to recognize their influence and include them in our analysis, if mainly as control variables. We focus on two broad classes of potential alternative explanations: campaign environment and candidate characteristics.⁴³

The social, political, and institutional environments candidates confront vary considerably from state to state.⁴⁴ Broadcast advertising should be more common in states with populations that have lower levels of educational attainment. Comparisons of broadcast and narrowcast mediums find that 'newspaper use, aimed at opinion leaders and elites, is more highly correlated with political knowledge than is television use.'⁴⁵ Like Hogan, we expect candidates in states with highly

⁴⁰ Charles Stewart III and Mark Reynolds, 'Television Markets and US Senate Elections', *Legislative Studies Quarterly*, 15 (1990), 495–523.

⁴¹ Broadcast advertising represents the largest fraction of most candidate promotion budgets, on average 75 per cent of promotional spending by candidates in our data. Other promotional efforts, such as newspaper or billboard advertising, are less than 1 per cent of candidate promotional spending on average. Campaign events, rallies and other activities represent about 9 per cent of promotional expenditures on average.

⁴² Michael P. McDonald, *U.S. State Turnout Rates for Eligible Voters, 1980–2000* (computer file) (Ann Arbor, Mich.: Inter-university Consortium for Political and Social Research [distributor], 2002).

⁴³ With the exception of Paul A. Dawson with James E. Zinser, 'Characteristics of Campaign Resource Allocation in the 1972 Congressional Elections', in Louis Maisel, ed., *Changing Campaign Techniques: Elections and Values in Contemporary Democracies*, *Sage Electoral Studies Yearbook*, Vol. II (Beverly Hills, Calif.: Sage Publications, 1976), pp. 93–137, the vast majority of these studies focus on the US House of Representatives and state legislative campaigns.

⁴⁴ Dennis E. Kinsey, 'Political Consulting: Bridging the Academic and Practical Perspectives', in Bruce I. Newman, ed., *Handbook of Political Marketing* (Thousand Oaks, Calif.: Sage Publications, 1999), p. 119; Mark Westlye, *Senate Elections and Campaign Intensity* (Baltimore, Md.: Johns Hopkins University Press, 1991).

⁴⁵ Paul Gronke, *The Electorate, the Campaign, and the Office: A Unified Approach to Senate and House Elections* (Ann Arbor: The University of Michigan Press, 2000).

urbanized populations, to be more likely to use broadcast advertising than print or direct mail advertising, given the spatial concentration of potential voters.⁴⁶ Oppenheimer notes that senators serving large states may be forced to rely on broadcast media to extend their range of contact.⁴⁷ For each campaign in our dataset, we include the percentage of state voters holding a college degree in 1990, as well as the state's total land area and percentage of a residents residing in metropolitan areas in 1990.⁴⁸

We also include indicators for the structure of state media markets, reflecting the possibility that media market structures could affect the use of broadcast campaign techniques.⁴⁹ We use measures developed by Stewart and Reynolds to characterize the structure of state media markets.⁵⁰ *News mix* is a measure of the fragmentation of state media markets – a state with a high score on *News mix* is served by media markets likely to devote more of their news coverage to that particular state, rather than other states. States served by fragmented media markets that also serve other states (for example, Wyoming) have lower scores on *News mix*. *Market dominance* characterizes how much a state is dominated by a large media market. Again, Wyoming scores low on *Market dominance*, given that none of the six media markets serving the state provides information to any sizeable proportion of the state's residents. Each of these is computed using market composition data from the *Broadcasting & Cable Yearbook*.⁵¹

Beyond these contextual factors, we are interested in controlling for additional factors related to the candidates' characteristics and the campaign being contested. Evidence suggests that while incumbents and challengers employ similar allocation strategies, incumbents raise and spend more on their campaigns than challengers across all mediums, particularly television advertisements.⁵² We include an indicator for the partisanship of the candidate. Although differences across parties in terms of fundraising have been observed, Democrats and Republicans share similar allocation patterns and expenditures.⁵³ Further, candidates in competitive elections allocate a larger proportion of resources to television advertising.⁵⁴ Sure winners allocate a larger proportion of media expenditures to targeting media (especially direct mail and brochures) than less confident candidates, 'because they felt mobilizing partisan supporters yielded a higher payoff', whereas candidates with stronger opposition allocate resources to 'professional advertising specialists who purchased a variety of carefully selected media outlets'.⁵⁵ We also recognize that the campaign year could matter as well – with differences between a Senate campaign waged during presidential elections and those waged during the mid-term elections.⁵⁶ We include a dummy variable for each candidate's status as an incumbent (1) or not (0); and her political party, measured using another dichotomous variable marking Democratic candidates.⁵⁷ Finally, we include measures of the total

⁴⁶ Robert E. Hogan, 'Voter Contact Techniques in State Legislative Campaigns: The Prevalence of Mass Media Advertising', *Legislative Studies Quarterly*, 22 (1997), 551–71.

⁴⁷ Bruce Oppenheimer, 'The Representational Experience: The Effect of State Population on Senator-Constituency Linkages', *American Journal of Political Science*, 40 (1996), 1280–99.

⁴⁸ See US Department of Commerce, Bureau of the Census, *Statistical Abstract of the United States*.

⁴⁹ Hogan, 'Voter Contact Techniques in State Legislative Campaigns'.

⁵⁰ Stewart and Reynolds, 'Television Markets and US Senate Elections'.

⁵¹ *Broadcasting and Cable Yearbook* (New Providence, N.J.: R. Bowker, 1993).

⁵² Edie N. Goldenberg and Michael W. Traugott, *Campaigning for Congress* (Washington, D.C.: Congressional Quarterly, 1984); Ruth Ann Weaver-Lariscy and Spencer F. Tinkham, 'The Influence of Expenditure and Allocation Strategies in Congressional Advertising Campaigns', *Journal of Advertising*, 16 (1987), 13–21.

⁵³ Jennifer van Heerde, 'Strategy and Choice: Resource Allocation in the U.S. Senate, 1990–94' (unpublished doctoral dissertation: Riverside, California, 2003).

⁵⁴ John C. Greenwood, *Legislative Candidates and Campaign Spending in California* (Davis, Calif.: Institute of Governmental Affairs, University of California, 1974).

⁵⁵ Goldenberg and Traugott, *Campaigning for Congress*, p. 88.

⁵⁶ We are perhaps overly cautious in the inclusion of this election cycle variable but it does not substantially influence the conclusions we reach in the analysis.

⁵⁷ Campaign Study Group, *Senate Contribution and Spending Data, 1990–1994*. www.campaignstudygroup.com, Springfield, Virginia, 2000.

spending by the candidate's opponent, and dummy variables to indicate the year of the campaign – differentiating total spending in 1990 and 1992, with the 1994 indicator left out of the model to avoid over-specification.⁵⁸

As expected, we find that the costs of participation in the states influence candidate strategy: candidates are more likely to de-emphasize broadcast appeals as participation costs increase. We report several OLS models supporting this conclusion in Table 2. Columns 1 and 2 report models estimated using proportion of promotional expenses dedicated to broadcast appeals as the dependent variable. Columns 3 and 4 rely on our alternative indicator – broadcast spending per voting eligible resident. Across all four of these models, we find that closing date is negatively associated with television spending. As it is more difficult to vote, increasing the average sophistication and commitment of voters, campaigns shift dollars away from television buys and towards other promotional techniques. Similarly, as these costs rise, campaigns spend less per voter on broadcast

TABLE 2 *Closing Date and Candidate Spending on Broadcast Advertising*

	Percentage of promotional budget spent on broadcasting		Per voter broadcast spending	
	State context and candidate characteristics β (robust s.e.)	Without candidates spending most, least β (robust s.e.)	State context and candidate characteristics β (robust s.e.)	Without candidates spending most, least β (robust s.e.)
<i>Closing date</i> (no. days from election)	-0.291* (0.141)	-0.294* (0.148)	-0.009* (0.004)	-0.010* (0.004)
<i>Education</i>	-1.517† (0.827)	-1.591† (0.839)	-0.039* (0.017)	-0.045* (0.018)
<i>Per cent living in metropolitan areas</i>	0.174* (0.082)	0.107 (0.088)	-0.003 (0.002)	-0.002 (0.002)
<i>State land area</i> (millions of miles ²)	7.450 (5.830)	7.870 (5.310)	0.658*** (0.175)	0.720*** (0.181)
<i>News mix</i>	-10.330† (5.698)	-13.953* (5.568)	-0.388† (0.222)	-0.489* (0.236)
<i>Market dominance</i>	2.751 (7.816)	6.660 (8.089)	0.975*** (0.220)	1.084*** (0.221)
<i>Incumbent</i>	5.562* (2.761)	7.830* (3.231)	0.353*** (0.060)	0.374*** (0.067)
<i>Partisanship</i> (Democrat)	1.609 (2.629)	2.698 (2.753)	-0.022 (0.056)	-0.008 (0.057)
<i>Opponent spending</i> (millions)	0.814† (0.422)	2.860*** (0.668)	0.020* (0.010)	0.035* (0.014)
<i>1990 campaign</i>	-10.203** (3.479)	-9.588** (3.569)	-0.166* (0.080)	-0.130 (0.084)
<i>1992 campaign</i>	0.078 (2.603)	1.078 (2.614)	-0.163* (0.066)	-0.139* (0.068)
Constant	93.343*** (10.792)	92.676*** (10.725)	1.166*** (0.256)	1.208*** (0.258)
	$N = 206$ $F_{11,194} = 2.79^{**}$ $R^2 = 0.14$	$N = 186$ $F_{11,174} = 4.86^{***}$ $R^2 = 0.20$	$N = 206$ $F_{11,194} = 9.08^{***}$ $R^2 = 0.36$	$N = 186$ $F_{11,174} = 9.55^{***}$ $R^2 = 0.40$

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$ (two-tailed tests); † $p < 0.10$ (one-tailed test).

⁵⁸ Campaign Study Group, *Senate Contribution and Spending Data, 1990–1994*.

appeals. Other things equal, US Senate candidates in states with higher voting costs are less reliant on television and radio advertising than candidates in states with low registration costs. Differences in the kinds of voters allowed into or filtered out of the electorate as a function of the costs of voting affect candidate strategies as we expected.

Several other variables have a consistent effect on candidate spending priorities. The *News mix* indicator for media market fragmentation also has a negative relationship with broadcast spending – candidates in states with more fragmented markets spend less on television relative to candidates in other states. Incumbents are more reliant on broadcast appeals than non-incumbents. Also as we anticipated, candidates with challengers who spent more money were themselves more likely to rely on broadcast appeals than candidates with less well-funded competition. Also consistent with expectations, we find no statistical evidence of party differences in relative allocation strategy. The other consistent effect is that television advertising tended to represent a smaller proportion of each candidate's promotional budget, with less per capita spending, in 1990 compared to 1992 and 1994. Again, we are far more interested in the relationship between voting costs and candidate choices than these other influences on the relative importance of broadcast campaign appeals in US Senate races.

Robustness and the Potential Influence of Outliers

As noted, Table 2 presents several different model specifications. Several tests for the influence of outliers suggested no strong influence of outliers on the model presented in Table 2.⁵⁹ However, to demonstrate the robustness of these results to the potential influence of extreme cases, we estimated each model with the full range of available data, in columns 1 and 3, as well as each model with extreme cases removed from the analysis. We trimmed each tail, removing approximately 10 per cent of the observations – the ten campaigns that spent the most on television and the ten campaigns that spent the least. These models are presented in columns 2 and 4 of Table 2. Our findings are not skewed by the inclusion of low-spending candidates like Michael Beasley of Alaska, who spent only \$1,000 in his 1990 run against incumbent US Senator Ted Stevens (R-AK).

Interpreting the Model Using Predicted Values

To interpret more intuitively the influence of voting costs on candidate spending choices, we use predicted values estimated using *Clarify*, shown in Table 3.⁶⁰ In states with election day registration (or no registration requirement) and all other variables held at their mean values, the model predicts candidates will spend about 82.1 per cent of their promotional budget on broadcast advertising. Candidates in states with a more restrictive closing date set thirty-two days before the election spend less on broadcast advertising and more on other kinds of more targeted appeals. The model predicts these candidates will spend 71.8 per cent of their promotional budget on broadcast appeals. Given that the average promotional budget in this dataset was just over \$1.7 million, our model predicts that with low registration costs, the average Senate campaign in states with low cost voting would spend about \$1,417,741 on broadcast advertising. As registration costs increase, driving less sophisticated voters out of the electorate, the average candidate is predicted to spend about \$178,212 less on broadcast advertising. Those dollars shift into more targeted appeals aimed at turning out well-identified partisans. The analysis of our alternative measure of reliance on television advertising informs a similar inference – higher cost registration is associated with less spent per eligible voter on broadcast advertising. Comparing states with election day registration

⁵⁹ John Neter, William Wasserman and Michael H. Kutner, *Applied Linear Statistical Models*, 3rd edn (Homewood, Ill.: Irwin, 1990).

⁶⁰ Michael Tomz, Jason Wittenberg and Gary King, *Clarify: Software for Interpreting and Presenting Statistical Results, Version 2.1* (Cambridge, Mass.: Harvard University, 2003).

TABLE 3 *Participation Costs and Importance of Broadcast Advertising*

	Percentage of promotional budget spent on broadcasting	Per voter broadcast spending
Low-cost voting (0 days)	82.1 \$1,417,741 on average	\$0.73
High-cost voting (32 days)	71.8† \$1,239,529 on average	\$0.46*

Note: This assumes a promotional expenditure of \$1,726,363, the average promotional budget in US Senate races, 1990–94. Percentage values were estimated using the model reported in Table 2 and *Clarify* for Stata (Tomz, Wittenberg and King, *Clarify*), holding other variables in the model to their mean values. Each estimated shift in predicted value is significantly different from the baseline of the minimum score on lower costs registration with $p < 0.05$ (*) or $p < 0.10$ (†), two-tailed tests.

to those with a registration closing date thirty-two days out from the election, broadcast spending shifts from approximately 73 cents per voter to 46 cents per voting eligible resident of the average state.

CONCLUSION

In this Research Note we show that the composition of the electorate varies in the light of how easy or how hard it is to vote and we have also shown how campaigns vary in a similar light. The impact of registration laws and barriers on overall levels of turnout is well known. Here we have shifted focus to concentrate on the properties of electorates, as shaped by electoral laws; however, the main point of this Note concerns campaigns and campaigning. A considerable literature considers how much money candidates raise and spend. Here we have moved beyond looking at simple totals of campaign expenditures to examine systematic variations within those spending patterns. Candidates do not spend their money in the same way: there is not a ‘one-size fits all’ or ideal type pattern of campaign spending. Nor is there a pattern of spending determined simply by the constraints of available resources. Rather, there are mixes of campaign expenditures as campaigns make different choices of how to invest their resources. There is more to campaign expenditure than deciding (or being able) to spend a little or a lot. Even well-heeled campaigns come up against a budget constraint at some point: deciding not just whether to spend, but how to spend is a matter of some importance. Our findings buttress the work of other scholars who conclude we can profitably explore candidate resource allocation beyond total expenditures in races.⁶¹ Here we show that political campaigns respond to the kinds of voters they face through the mix of campaign expenditures.

One final implication of this Note is that theorists interested in electoral processes may have incompatible goals. We occasionally hear calls for a renewal of American politics that focus on connecting individuals to candidates and communities in a way contemporary television advertising may be unable to accomplish – a renewed emphasis on ‘people politics’ rather than mediated campaigns. However, many like-minded observers would also prefer more inclusive politics to less inclusive elections (e.g., reducing barriers to participation such as registration prior to election day). One implication of this Note is that when barriers to participation are reduced, candidates face increased incentives to engage in impersonal campaigning techniques. Perhaps an effort to balance

⁶¹ See, for example, Daron Shaw, ‘The Effect of TV Ads and Candidate Appearances on Statewide Presidential Votes, 1988–96’, *American Political Science Review*, 93 (1999), 345–63; van Heerde, ‘Strategy and Choice’.

the goals – make it easier to vote but not costless – could optimize on the apparently contradictory goals.

APPENDIX: CAMPAIGN SPENDING DATA CLASSIFICATION AND RECODING

The Campaign Study Group (CSG) assigns campaign expenditures to eight major categories: advertising (promotional), overhead, fund raising, polling, other campaign activity, constituent gifts and entertainment, donations and unitemized expenses.⁶²

Promotional Expenditures

1. TV/Radio Advertising – payments to consultants, to stations for broadcast time, production costs associated with the creation and development of advertisements.
2. Newspapers – payments for newspaper advertising, and any consultant fees.
3. Persuasion Mail – payment for design, printing, postage, mailing lists and consulting.
4. Billboards – payment for billboards and consultant fees.
5. Journal Ads – payment for advertisements in journals, artwork and consultant fees.
6. Campaigning – costs associated with filing, petition drives, rallies, parades, signs, buttons, bumper stickers, get-out-the-vote efforts and relevant consultant expenses.
7. Other – fees and payments for all other advertising expenditures.

Non-Promotional Expenditures

Overhead (office furniture/supplies, rent/utilities, salaries, taxes, professional services including lawyers and accountants, telephone, automobiles, computers, office equipment, travel, and food for meetings)

Fund Raising (events, direct mail, telemarketing)

Polling

Constituent Gifts and Entertainment

Donations (to candidates, civic organizations, interest groups and political parties)

Unitemized Expenditures

⁶² Dwight Morris and Murielle E. Gamache, *Gold-Plated Politics: The 1992 Congressional Races* (Washington, D.C.: Congressional Quarterly, 1994).