Election Laws, Mobilization, and Turnout:
The Unanticipated Consequences of Election Reform

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Abstract

State governments have experimented with a variety of election laws to make voting more convenient and increase turnout. But the impact of these reforms vary, often in surprising ways that provide insight into the mechanisms by which states can encourage or reduce turnout. Our theory focuses on mobilization and distinguishes between the direct and indirect effects of election laws. We conduct both aggregate and individual level statistical analyses of voter turnout in the 2008 presidential election. The results show that reforms such as election day registration have a consistently positive effect on turnout. By contrast, the most popular reform – early voting – is actually associated with lower turnout. We propose that early voting has created negative unanticipated consequences, reducing the civic significance of elections for individuals, and altering the incentives for political campaigns to invest in mobilization.

Advocates, journalists, and politicians frequently propose changes to election laws out of the belief that making voting easier will increase voter turnout. Deductively, it stands to reason that making voting more convenient – through relaxed registration rules, registration on election day itself, voting prior to election day, or expanded absentee voting – will encourage more people to cast ballots. We challenge this notion, and show that the most popular reform – early voting – actually *decreases* turnout, an unanticipated consequence that has significant implications for policy and for theories of how state governments can influence turnout.

This result is counterintuitive, and it certainly runs against the grain of conventional wisdom, which has long held that lowering the cost (or increase the convenience) of voting will lead to higher voting. Our explanation involves a rethinking of the cost/benefit calculus of voting to include both direct and indirect effects of voting reform. Direct effects are the costs imposed by the state, and include registration requirements, polling locations and hours, and (where applicable) rules such as identification requirements. But these laws also inadvertently affect mobilization by non-governmental actors such as the media, campaigns, interest groups, friends, and family. These actors indirectly raise or lower the costs of voting depending on how much information they provide and the social incentives for voting they generate. We find that liberalizing election laws through early voting decreases the direct costs of voting, but also has the unintended effect of increasing the indirect costs of voting even more. Campaigns respond to early voting by altering their spending and get-out-the-vote efforts; media attention is thinned out as coverage is spread over a wider period; and friends and family may become less attuned to election day. The result is a dilution of the importance of election day itself, an effect that more than offsets the increased convenience of early voting and which results in lower net turnout.

An implication of this counterintuitive finding is that the effects of election laws occur both in isolation and in interaction with each other. The reforms we analyze – early voting, election day registration (EDR), and same-day registration (SDR) – appear across the states by themselves and in various combinations. Each combination, we find, has a distinct effect on turnout. The existing literature on early voting draws careful distinctions between the different permutations of early voting systems, such as in-person absentee or mail-in absentee. These differences matter. At the same time, however, scholars have paid less attention to whether early voting is accompanied by SDR, EDR, or both. We find that early voting has the most depressive effect on turnout if voters still have to register before election day; the greater convenience of additional voting opportunities are irrelevant to someone ineligible to vote because they missed a registration deadline.

The remainder of the paper unfolds as follows. We begin by analyzing prior research on state election laws, turnout, and mobilization. We then offer a model of voter turnout that captures the effects of the combinations of EDR, SDR, and early voting. We address possible interactions by classifying all of the potential permutations, and estimating separate effects for each. Our models use aggregate and individual level data, and we present several robustness checks to support the main models' findings. We demonstrate that early voting decreases turnout, but also find a synergistic effect in which the turnout-increasing impact of election day registration offsets the depressive effect of early voting. We conclude by discussing the broader implications of the findings for future research on election reform and mobilization.

Previous Research

Reorganizing the voting process to foster turnout has long been an interest in both the academic and policymaking communities, a function of the normative concerns about low turnout.[1] Until recently, these efforts were focused almost exclusively on reducing the legal costs of voting, by making registration easier and voting more convenient. The most commonly proposed reforms have been election day registration, same day registration, and especially early voting. Here we set out the state of research on these practices, and note some limitation in existing research.

Election day registration permits eligible voters to both register and to vote on election day. In theory, this increases turnout by eliminating the need for individuals to take two separate actions – registering days or weeks prior to voting, and then casting a ballot at a later date – to exercise their franchise. It also creates opportunities for voters who become interested late in the election cycle, eliminating the barriers posed by early registration closing dates. These effects have long been recognized. Thirty years ago, Wolfinger and Rosenstone noted, "[r]egistration is usually more difficult than voting, often involving more obscure information and a longer journey at a less convenient time, to complete a more complicated procedure. Moreover, it must usually be done before interest in the campaign has reached its peak" (1980, 61). EDR lowers the cost of voting by combining the separate steps of registering and voting into "one essentially continuous act" (Wolfinger, Highton, and Mullin 2005, 3), and permits voters to register at the last moment when interest is highest.[2]

A consistent line of research has confirmed the effects of EDR. Estimates of the overall turnout effects of EDR range from three to seven percentage points (Brians and Grofman 2001; Fenster 1994; Hanmer 2009; Knack 2001). Highton (2009, 509) summarizes the impact of EDR on voter turnout as "about five percentage points." The closing date is the most consequential

[1] Lipjhart (1997) also suggested proportional representation, and even compulsory voting, as mechanisms for raising turnout.
[2] The EDR reform spread in several waves. See Hanmer's (2009) comprehensive analysis of EDR for a review of the history and reasons for adoption.

aspect of registration, because it requires voters to take initial action as much as a month before election day, and disenfranchises recent movers (Squire, Wolfinger, and Glass 1987; Timpone 1998; Highton 2004; Hershey 2009). EDR overcomes this obstacle and maximizes election day enthusiasm.

A second set of reforms take a different approach by permitting voting outside the traditional election day setting. Although the policies take different forms, they all share the defining feature of eliminating the need for the voter to appear at the local polling place on election day to cast a ballot. These practices include absentee voting in its various guises, voting-by-mail, and in-person early voting (Fortier 2006; Gronke et al. 2008). There is additional variation in where people vote: in-person early voting may take place either at central election offices or at dispersed voting centers in locations such as shopping malls or libraries.

Of these practices, those under the umbrella of "early voting" have been among the most touted reforms in recent elections. We consider **early voting** to be a set of practices in which registrants can cast ballots *without excuse* before election day.[3] Early voting has more than quadrupled since the early 1990s, increasing from 7% of all votes in 1992, to 20% in 2004, and 30% in 2008. Now more than half of the states allow early voting in some form. The popularity of early voting and decrease in the importance of the traditional election day has led researchers to conclude that "United States is in the midst of a revolution in voting" (Fortier 2006, 1).

[3] Not all absentee voting practices qualify, because states impose a wide range of requirements and conditions. In some states, voters must provide a justification before receiving absentee ballots, with wide variation in the stringency of the justifications. Minnesota, for example, issues an absentee ballot only when a voter is ill, away from home on election day, or serving as an election official; when voting is impossible for religious reasons; or because of a declared emergency. "No excuse" absentee frees voters from the need to provide a reason for voting absentee. Permanent absentee voting allows voters to request absentee ballots for all elections; the ballot is automatically sent. For a review of these practices see Gronke et al. (2008).

In contrast to the positive findings about EDR, emerging studies of early voting have found that it has little impact on voter turnout. Gronke et al. (2007), for example, concluded that early voting had no effect on turnout in national elections between 1980 and 2004. Aside from the special case of voting by mail in presidential elections, none of the early or absentee voting laws they studied boosted turnout in either presidential or midterm elections.[4] Other studies have produced similar null relationships between early voting and turnout (Fitzgerald 2005; Giammo and Brox 2010; Gronke et al. 2008; Oliver 1996; Primo, Jacobsmeier, and Milyo 2007; Scheele et al. 2008; cf. Wolfinger, Highton, and Mullin 2005).[5]

By studying only one type of law at a time, these studies have overlooked a crucial element of the voting process, which is whether early voting is combined with EDR or the related process of same day registration (SDR). **Same day registration** permits people to both register and vote in a single act prior to election day. It reduces the potential inconvenience of having to vote on a specific election day, eliminates the registration closing date, and permits "one-stop shopping." Despite its widespread use, we know of no studies that have analyzed SDR's direct effects on turnout. As we will show, including SDR in turnout models alters the inferences drawn about the effects of early voting.

[4] Previous research also shows a positive effect of vote-by-mail (Magleby, 1987; Southwell and Burchett, 2000; Karp and Banducci, 2000), but these studies have largely been confined to Oregon and Washington. Kousser and Mullin (2007) estimate that a shift to vote-by-mail in California would result in a three-point drop in turnout. We do not study vote-by-mail directly but effectively account for it by including dummy variables for Oregon and Washington.

[5] Stein and Vonnahme (2008) find a small positive effect of early voting *centers* on turnout but only among younger, infrequent voters and those who have not yet developed the voting habit. Giammo and Brox (2010) find a short-term positive effect followed by a long-term negative effect. Others find negative effects only in particular model specifications (Leighley and Nagler 2009; Tolbert et al. 2008).

Election Laws as Turnout Mechanisms

All three of the reforms we consider here – early voting, SDR, and EDR – are designed to increase turnout by lowering the direct costs of voting. But this simple logic belies the fact that the turnout effect of each practice operates via different mechanisms. EDR lowers costs by providing "one-stop shopping" on election day, eliminating a bureaucratic step in the voting process and providing voting opportunities to individuals who become interested late in the campaign. Early voting, in contrast, lowers costs by offering the convenience of additional opportunities to vote, allowing voting over an extended period rather than making the election a one-day event. SDR essentially combines these two effects by permitting "one-stop shopping" to occur before election day.

Any discussion of turnout must focus on the costs of voting. These can be imposed directly through the legal framework of the voting process itself, and are controlled by the state. But an exclusive focus on these direct effects will miss the importance of the *indirect* effects of laws as they are mediated through the mobilization efforts that occur outside of the state's purview (Oliver 1996; Rosenstone and Hansen 1993). It is of course easiest for policy makers to envision how changes in election law will shape direct legal burdens on voters, but they are less likely to understand that such changes may indirectly affect how non-state actors alter their own mobilization efforts. What matters is the total net cost of voting, not just the legal hurdles that voters face.

The impact of election laws should be most apparent for voters who are on the turnout bubble, neither highly likely to vote nor abstain (Highton 2004). Citizens who are almost certain to cast a ballot will not be affected by marginal changes in the rules; they will vote no matter what. Similarly, low likelihood voters may simply be beyond the reach of any voting reforms.

For people near the voting threshold, it is axiomatic that small changes have the highest likelihood of turning nonvoters into voters, or vice versa (Hanmer 2009). Although this point may be obvious, the implications are less so. Through this lens, we can distinguish between voting reforms that actually bring in new voters, and which therefore can increase turnout, and those reforms that simply provide alternative opportunities for voters who would cast a ballot under any set of rules.

To use Berinsky's (2005) classification, reforms can either *stimulate* new voters, or *retain* existing voters. Stimulation can be provided strategically by campaigns that engage in a media blitz as election day approaches. But our theoretical view conceives of mobilization more broadly than the efforts of campaign or party elites whose primary interest is in winning votes. Stimulation also arises nonstrategically from many informal sources: the local media who cover election day, intentional or unintentional recruitment by family, acquaintances, and coworkers who are discussing the election, and the visibility of polling places and other election day activities. This approach broadens the standard definition of electoral mobilization to include informal recruitment (Verba, Schlozman, and Brady 1995) and other social incentives for voting.

Some scholars have speculated that a loss of the "civic day of election" could lower turnout (Fourtier 2006; Thompson 2004). Traditionally, election day is as much a social event as a political one. For at least some voters, what gets them to the polls is the stimulation of the day's news, observation of activities at polling places, and conversations with friends and neighbors. Local news coverage, discussions with peers, and the sheer visibility of election day activities all help subsidize the costs of voting by providing information about candidates and the process of voting, and by enhancing the social benefits of taking part in a collective enterprise.

When these activities are suppressed or diluted, so is the stimulating effect, particularly for the "peripheral" voter.

Our approach updates Berinsky's argument that most election reforms retain existing voters rather than bring new out new voters. Our refinement emerges from considering the different ways that EDR and early voting affect turnout: we expect early voting to retain existing voters, and EDR to stimulate new voters. EDR lowers the direct costs of voting because it permits those who come late to the campaign to still become participants. Crucially, it does so without robbing election day of its stimulating effects, and most likely *increases* the impact of election day stimulation. This is supported by research suggesting that the face-to-face interactions that mark election day voting create social capital and draw potential voters to the polls (Addonizio, Green, and Glaser 2007; Fourtier 2006; Kropf, Swindell, and Wemlinger 2009; Thompson 2004).

Early voting also lowers the direct costs of voting, but mostly as a convenience for those who were already planning to vote. Registration statistics bear this out: in the states that had early voting and SDR in 2008, 3.6 million same day registration applications were filed; of those, only 963,144 (or about 27%) were new voters added to the registration rolls for the first time.[6] Early voting may bring out some new voters who would have difficulty making to the polls on election day (the direct effect), but it more than offsets this increase by dissipating the energy of election day over a longer period of time and thus reducing mobilization (the indirect effect). Campaigns tend to strategically target their supporters at the opening of the early voting period and become less motivated to escalate their get-out-the-vote efforts as election day approaches and large numbers of votes have already been cast. Further, by siphoning away the concentrated

[6] The EAC collected data on SDRs for the first time in 2008; the EAC defines SDR as "registering to vote on the same day in which a vote may be cast" (EAC 2009).

civic activities of a traditional election day, the social excitement and information provided by nongovernmental actors are significantly reduced.

Our effort to pin down the relationship begins with Figure 1, which plots overall voter turnout in the 2008 presidential election against the percentage of votes casts early, using data from the Current Population Survey. The negative relationship is clear: higher early voting rates are associated with lower overall turnout. The solid line is the bivariate regression line; the dotted line is the regression line after omitting Washington and Oregon (both of which have unusual mail-in-balloting rules not analogous to those in any other states). In both cases, the slope is negative and statistically significant.

Insert Figure 1 here

This bivariate analysis is only a starting point, as it neither captures the complexity of the overall relationship nor accounts for the intervening control variables that ultimately must be included. But the clarity of the relationship certainly hints that widespread use of early voting is unlikely to increase voter participation.

Data and Methods

The first step in analyzing the effect of election laws on turnout is classifying states according to their laws. Each specific election practice can have an effect in isolation but should also be considered as packages of laws. Many states in fact adopt multiple reforms, so each distinct combination must be evaluated. The diversity of terminologies and practices across the states produces 50 different election administration environments, but we have attempted to reduce this variety to essential differences in three election laws. Figure 2 is a Venn diagram that shows the different voting rules in place for the 2008 presidential election, and the possible combinations of those rules. In practice, there are thirty six states employing one of the five possible permutations of early voting, EDR, and SDR. The fourteen states that have none of the three practices are not listed. The most common approach, used by eighteen states, is simply to allow early voting for voters who are already registered.[7] We draw this distinction because the need to offer an excuse to obtain an absentee ballot dramatically reduces the number of people who avail themselves of early voting, and almost by definition will include only the most likely voters. Election day registration was easier to identify, although a careful reading of state statutes shows some subtle differences in how the practice was implemented; we classify twelve states as having EDR in 2008, excluding North Carolina from this category.[8]

Figure 2 about here

Identifying states with same day registration posed some challenges, in part because SDR only occurs in combination with early voting. Our criterion for defining SDR is that the practice must be widely available to eligible voters without significant administrative barriers. We excluded states that had limited "one-stop shopping" available to particular subsets of the population. For example, Colorado permits SDR only for "emergency" registrants who moved across county lines after the registration closing date, and is not counted as having SDR in our

[7] We do not distinguish between states that actually count the ballots ahead of the election, and states that merely accept the ballot for election day tallying. Although the administrative procedures behind no-excuse absentee voting and true early voting are distinct in important ways, voters will see no differences between the two practices. Indeed, research by Giammo and Brox (2010) finds that the turnout effects of no-excuse and absentee voting statistically identical. Our coding draws from the National Conference of State Legislatures.

[8] The states commonly considered as having EDR are Idaho, Iowa, Maine, Minnesota, Montana, New Hampshire, North Carolina, Wisconsin, and Wyoming. After carefully reviewing state statutes and consulting with state election officials, we modified this list for our analysis. In 2008 we include the usual suspects along with North Dakota (although it technically has no registration). We exclude North Carolina, because while it has same day registration and early voting, there is no registration permitted on election day itself. But we also include Alaska, Connecticut, and Rhode Island, each of which permitted election day registrants to vote for President. Breaking with the common practice, we suggest that these states should be treated as EDR states in a presidential election year. EDR states may still have closing dates for traditional registration, but nonetheless permit last-minute registrations on election day itself.

analysis. As we define it, a dozen states had some form of SDR in 2008, permitting voters to register and vote anywhere from one month to one day before the election.

Compared to states with none of these reforms, there are seven possible configurations of EDR, SDR, and early voting: (1) EDR alone, (2) SDR alone, (3) early voting alone, (4) EDR and SDR, (5) EDR and early voting, (6) SDR and early voting, (7) or all three. Because SDR requires early voting, there are no states with just SDR, and none with the two-way combination of SDR and EDR. As a result, there are effectively five combinations, each of which is compared to the baseline states that have none of these electoral practices.[9]

To determine the effects of these laws on turnout, we analyze two types of data from the 2008 presidential election: county-level election returns and individual data from the Current Population Survey (CPS) November 2008 Voting and Registration Supplement. The CPS, a common data set in voting analysis, is a large-scale sample survey normally used to collect labor force data. In November of election years, the instrument asks a short set of voting and registration items to a sample of about 130,000 people. Most questions in the voting battery have between 60,000 and 90,000 valid observations. All of our data sets have large sample sizes, an advantage that allows us to make careful comparisons among the states in each section of Figure 2, and to include a wide range of control variables.

Before we turn to the actual estimates, we consider the potential for endogeneity in our cross-sectional county- and individual-level analyses. Hanmer (2009) has challenged the

[9] An alternative approach would be to create dummies for the three laws (EDR, SDR, and early voting) and interaction terms for each combination, for a total of three direct effects, three two-way interactions, and one three-way interaction. After summing various combinations of coefficients to get total effects, the results from the two approaches should be identical. We opt for the five indicators because they offer a simpler and more immediate interpretation. They may also be handled as dichotomous treatments in a matching analysis, which we employ as a robustness check.

foundations of observational studies of turnout effects, arguing that election laws are endogenous, and that as a consequence the most commonly used research methods and statistical techniques produce biased results. The problem, as he describes it, is that we cannot directly observe the quantity in which we are most interested: how an individual's behavior changes if the voting rules that she faces changed from no early voting to early voting (or vice versa). Instead, we draw an inference about the impact that early voting has on an individual's likelihood of voting, based on the behavior in early voting and non-early voting states. But since we cannot observe the treatment effect directly, we must make assumptions about the underlying data. Most importantly, we assume that the treatment – the particular package of voting rules in effect in a state – is *exogenous* in our models of voting.

If voting rules are not exogenous, then our estimates of the effects of the voting rules on turnout will be biased and inconsistent (see King, Keohane and Verba 1994, 185-196). Hanmer cites as examples of endogeneity a high-turnout state being more likely to enact reforms such as EDR that stimulate even higher high turnout, or states with histories of discouraging participation as less likely to adopt reforms that encourage high turnout. Erikson and Minnite (2009) make a similar argument about voter identification laws.

We believe these concerns must be taken seriously, but do not undermine our conclusions about early voting for the following reasons. The universe of states that have adopted different mixes of election reforms is now large and diverse, making it more difficult to make sweeping statements about why states adopted reform. In the case of early voting, the states that apply it are so heterogeneous that it seems reasonable to assume that the practice is exogenous, at least in terms of unobserved variables that correlate with turnout. Early voting is permitted in the South (Georgia, Louisiana, Tennessee, Texas, Florida, North Carolina), the Northeast (Maine, Vermont, New Jersey), the Midwest (Iowa, Wisconsin, Illinois, Indiana, Ohio,) the Southwest (Arizona, New Mexico, Colorado, Nevada), and the Far West (California, Hawaii). Early voting exists in states that have traditionally high turnout (Wisconsin, Alaska, Maine) and in states with traditionally low turnout (Nevada, Arizona, Georgia). Some states with traditionally high turnout levels *do not* have early voting (Minnesota, Connecticut, New Hampshire). In short, it is difficult to imagine a common political culture in early voting states that also produces high levels of turnout.

Second, it is straightforward to control for variables that might cause a spurious relationship between election laws and turnout. For example, if states with more educated populations or more competitive elections happened to have higher turnout and adopt more liberal election laws, controlling for these all of these confounds in a multivariate analysis will leave only the residual effects of the laws themselves.

Third, we can conduct a probe for possible endogeneity, looking for evidence of an unobserved variable that affects both turnout and the likelihood of adopting a particular set of reforms. To see if there are some underlying variables that might be driving a state's selection of voting rules, we used an index of policy liberalism developed by Erikson, Wright, and McIver (1993, 77) as a proxy measure of state political culture. This index, which is based on a range of state policies, from tax structure to ratification of the Equal Rights Amendment, is positively correlated with turnout ($r = 0.59$ for the 2000 election, $r = 0.29$ for the 1996 election). Because the index is based on state policies in the 1980s, it predates many states' move to early voting. If the index were related to the adoption of early voting laws, it would be strong evidence of that the laws themselves are endogenous. But there is no relationship at all between political culture and early voting laws. Among states with early voting, the mean composite policy liberalism index is -0.05, (s.d. = 0.85); among states with no early voting in 2008, the index is 0.07 (s.d.= 1.20).

Finally, when scholars have analyzed the effect of election laws with methods that make weaker assumptions about exogeneity, the results are close to what is found with more traditional methods. Studies using panels, time series, and difference-in-difference methods, produce results similar to more traditional cross-sectional or individual analyses (Giammo and Brox 2010; Bowler et al. 2001; Leighley and Nagler 2009; c.f. Erikson and Minnite 2009). Indeed, we estimate a differences-in-differences and matching models as robustness checks and find similar results to our cross section studies. Hanmer's comparison of standard probit and the method of bounds he recommends as a remedy concluded that the difference in the results "is not sufficiently strong to allow one to reject the probit models" in his analysis (2007, 20). In short, while it remains possible that some election laws, particularly those liberalizing registration, are partially endogenous, we are confident that the exogeneity of early voting is clear.

To avoid spurious findings, we include an array of control variables generally known to influence turnout. We also adjust the standard errors to account for clustering of counties by state (Erikson and Minnite 2009; Primo, Jacobsmeier, and Milyo 2007). By clustering, employing two-tailed *t* tests, and using a multi-pronged set of election law indicators, and controlling for many covariates, ours is a conservative approach. Finally, we estimate relationships at both the aggregate and individual levels. Theoretically there is no necessary relationship between the results of an aggregate model and an individual model. The aggregate analysis is estimating how much a law alters the turnout percentage in a county whereas the individual analysis is estimating how much a law alters the likelihood that a person will vote. The two analyses will differ to the degree that people with differing probabilities of voting are clustered geographically by county and state. It is thus reassuring when the two types of models produce similar results.

Empirical Results

County Level Regression Analysis

We begin with aggregate analysis of turnout at the county level. The dependent variable is turnout in the November 2008 presidential elections as a percentage of the voting age population. The key explanatory variables are dichotomous indicators for each of the five possible realizations of voting rules in Figure 2. The signs and significance levels of these coefficients show the net contribution that each distinct combination makes to voter turnout. The control variables include other election laws, an array of demographics, and an indicator of the competitiveness of the presidential campaign. State election law variables include the number of days before the election that registration closes, a dummy indicating whether votes are required to show identification at the polls, and a dummy indicating whether ex-felons are barred from voting. Demographic controls for each county include the percent African-American and Hispanic, median income, percentage of adults with bachelor degrees, percentage 65 or older, total population, and population density. Our measure of campaign competitiveness is the difference between the final Pollster.com survey estimates for McCain and Obama. To ease the interpretation of the competitiveness variable, we reverse the sign, so that a positive relationship suggests that a more competitive campaign increases turnout. We also include dummy variables for Oregon and Washington, whose reliance on mail-in balloting falls outside the three primary types of election laws we examine here.

The OLS results are presented in Table 1. The results are weighted by county population to overcome the heteroskedasticity caused by the wide variance in county populations. The findings from Table 1 indicate that EDR alone or in combination with other laws has positive effects on turnout. EDR by itself increases turnout by 6.6 percentage points and any combination that includes EDR increases turnout by 5 to 9.6 percentage points. In contrast, early voting on its own has a negative effect of 3 points, and the combination of SDR and early voting has no effect. The vote-by-mail states of Oregon and Washington also had higher turnout. Control variables mostly perform as expected. Turnout is higher in counties with higher incomes, more college graduates, fewer Hispanics, older and less dense populations, and where the McCain-Obama campaign was close.

Table 1 about here

The results of these county regression models show that voter turnout is indeed sharply influenced by state laws concerning registration and early voting. The two key results are that (1) early voting by itself has a negative effect and (2) EDR by itself has a positive effect. Combining early voting with SDR appears to have little effect while combining EDR with early voting results in a significant and positive outcome. States that have all three approaches see sizeable increases in turnout.

Individual Level Regression Analysis

Our individual-level analysis of the likelihood of voting uses the 2008 Voting and Registration Supplement File of the CPS. The voting item is self-reported, asking whether people voted in the presidential election: respondents can answer "yes," "no," "don't know," "refuse to answer," or have no response recorded.[10] Following the standard practice, we calculate overall turnout by dividing the number of "yes" responses by the total number of individuals who are asked the question, counting as nonvoters those who refused to answer, did

[10] There is also a proxy reporting option, which we describe below.

not know, or did not respond. Because the voting items are only asked of individuals 18 years or older, this gives us an estimate of turnout as a percentage of the voting age population.[11] Using this method, 64.9% of respondents in the CPS reported voting in 2008 (N = 92,360), a number significantly higher than the actual 2008 VAP turnout, estimated at 56.8% (McDonald 2009), but one of the most accurate among all election surveys.[12]

We use a larger number of independent variables than most other models of turnout. Alvarez, Bailey, and Katz (2008, 8-9) describe the "canonical model of voter turnout using CPS data" as using age, residence in a Southern state, education, income, squared values of age and education, and non-White as independent variables (see also Wolfinger and Rosenstone 1980). However, the CPS includes a wide range of plausible and theoretically justifiable turnout covariates, including questions on length of residence, gender, marital status, racial identity, whether a respondent is a natural born citizen or naturalized, and if naturalized the year of entry into the U.S, and whether a respondent's voting status is self-reported or reported by proxy. Given our interest in estimating the effects of different voting and registration systems, it makes sense to include this additional information about respondents. As in the aggregate model, we include variables describing the five possible combinations of early voting, SDR, and EDR, as well as separate dummy variables for Oregon and Washington.

Table 2 about here

[11] At the same time, the CPS excludes the institutionalized population, estimated at about four million in 2000. In other calculations of the voting age population, these individuals are counted.
[12] This over reporting phenomenon is well known, and has several causes, including sampling bias (Burden 2000), false reports of voting (Gerber, Green and Larimer 2008), and mistaken recall (Belli et al 1999). Although there is no good way to correct for misreported voting responses (Katz and Katz 2009), the large literature on the problem has generally concluded that the consequences for statistical inference are minor (Highton 2005; although see Bernstein, Chadha, and Montjoy (2005) for a less sanguine take).

The logit results, reported in Table 2, are consistent with the key findings of the aggregate model. Controlling for a host of other factors, individuals are more likely to vote in states with EDR and less likely to do so in states with early voting. As in the aggregate model, it appears that EDR and SDR can offset the negative effects of early voting when the three practices are combined. To facilitate interpretation of the size of the effects, Figure 3 presents the effects translated into probabilities, along with the 95 percent confidence intervals. EDR raises the likelihood of voting by about 3.3 percentage points, although the 95% confident interval barely includes the zero point.[13] The clearest finding is early voting lowers the likelihood of turnout out by 4.4 percentage points. Other combinations have little effect.

Figure 3 about here

Robustness Checks

Although we lack the space to report them here, we have conducted a number of empirical exercises to test the validity of our results. First, in models not reported here, we pre-processed both the individual and aggregate data using matching methods before estimating our models. We employed a propensity score matching algorithm (Ho et al. 2009) to pair each individual or county in the treatment group with a demographically similar individual or county in the control group. The balanced data allow us to estimate causal effects more accurately and avoid the problem of specification error. The results were nearly identical to what we report here. Second, following Hanmer and others, we estimated difference-in-difference models on the aggregate data to address the endogeneity concern. Here we regressed the change in turnout between 2008 and 2004 on the changes in early voting and EDRs between those same two years. We also controlled for competitiveness, included state fixed effects, and clustered standard errors

[13] Table 2 shows a two-tailed test in which the effect is significant at $p = .092$ while the 95% confidence intervals presumes a p of exactly .05.

by state. The effects were smaller than the ones presented here, but confirmed the basic result that early voting decreases turnout and EDR increases it. Finally, we estimated a slightly modified version of the individual level model that accounts for the diversity of early voting laws. We were particularly concerned that the length of the early voting window varies substantially across states – ranging from just one day up to 46 days – and that our simple indicators ignore this variance. Adding a variable for the length of the early voting window finds a negative, significant effect of -.08 ($p < .10$). Substantively this implies that a person who has a prior probability of voting that is .5 will be two points less likely to vote for each day that the early voting period is open. Thus, not only does the simple early voting indicator show a negative effect, but a more subtle "dose-response" analysis finds that turnout declines as early voting expands. All of these results are available from the authors upon request.

Discussion

Both the county-level and individual-level analyses point to the same conclusion: early voting by itself depresses turnout. How is it possible that the additional convenience of early voting can drive turnout *down*?

Early Voters are Likely Voters

The first piece of the puzzle is that early voting gives likely voters additional opportunities to submit their ballot. Rather than bring new voters into the electorate, early voting simply retains and redistributes the votes of likely voters over an extended pre-election period.

We have long known that the inconvenience of registration, rather than the difficulty of voting itself, is what deters most citizens from participating (Erikson 1981; Timpone 1998). The additional convenience of early voting is worthless to a potential voter who finds that she is actually not registered, and therefore unqualified to vote. This problem can be rectified if on-the-spot registration is available. Without SDR, a voter would have to register in advance, often weeks before the vote is actually cast, and an unregistered voter who runs across an early voting booth in a shopping center has no reason to stop. Even with SDR, though, early voting requires a high degree of attentiveness, particularly in those states that allow early voting weeks before election day.

We thus hypothesize is that early voting is more likely to provide opportunities to those individuals *already likely to vote*. All else equal, we do not expect to see a significant increase in turnout, because early voting simply provides opportunities for these likely voters; absent early voting, they would have appeared at polling places on election day and voted then.

Fortunately, the CPS data offers a way to test this hypothesis. Respondents were asked not only if they voted but also by what means, either in person or by mail, and whether they voted on election day or earlier. The CPS marginals are close to the national estimates of early and mail voting, and thus offer a valid way to assess the effects of the different voting rules. Among those in the CPS sample who said they voted, 27.7% of reported casting their ballot prior to election day.[14] In the CPS sample, 15.9% of respondents reported voting by mail.[15] Using data from the U.S. Election Assistance Commission (EAC), we estimate the actual number of mail-in votes to be 18.6% of the total vote in 2008.[16]

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[14] This matches our definition of early voting and approximates the 30% estimate offered by McDonald (2009).

[15] Some respondents reported that they voted by mail on election day (or reported the same by proxy). This is possible in all-mail states and in states that allow absentee ballot drop-off on election day (e.g., California), or states that count absentee ballots postmarked on election day. The overwhelming majority of mail-in voters (95.2%) said they voted prior to election day.

[16] Matching the CPS mail-in result with national estimates is more difficult, because there is no single source for the actual number of votes submitted by mail. The EAC does not track mail-in votes, but we can approximate the number using the data collected on voting methods. The EAC's 2008 survey put the total 2008 vote at 133,944,538 (Election Assistance Commission 2009b, 22-23 [Table 29A: Ballots Cast By Means of Voting]). EAC data shows that 99.8

With this information, we can construct a four category choice variable for individuals: they can vote on election day, vote prior to election day in person, vote prior to election day by mail, or not vote.   Multinomial logit is the appropriate method for this problem, and the results will highlight the effect of the independent variables on the specific choices that voters and nonvoters make. The results of our application, using the same independent variables as in the basic individual-level model above, are reported in Table 3. In the model, the reference (i.e. excluded) category is voting on election day, so all coefficients are interpreted relative to traditional election day balloting.

Table 3 about here

The primary coefficients we are interested in for this model are those which we know indicate a higher likelihood of voting, based on existing research. The coefficients for education, income, and age are all positive and statistically significant in column 1 but negative and significant in columns 2 and 3, telling us that early voters score higher on these dimensions. Early voters are older, wealthier, and more educated, all characteristics that are highly correlated with turnout. We can state with confidence that the early voters comprise a population that, based on demographics, is more likely to vote than the population of voters that cast their ballots

million of these votes were cast in person, either on election day or earlier. Assuming that all remaining absentee and UOCAVA votes were mailed in, this would result in 23.1 million mail-in votes. To this we add the 1.8 million ballots submitted in Oregon's all-mail election system, giving us a total of 24.9 million mail-in votes, or 18.6% of the total. The EAC survey failed to classify roughly 8 million votes, because of data and reporting problems at the state level. Almost all of these unclassified votes occurred in Alabama, Massachusetts, and South Carolina. These states have very restrictive absentee voting rules, and in 2008 Alabama required absentee ballots to be hand-delivered to county officials. As a result, we believe that few of the uncategorized votes were mailed, and are confident that our 18.6% estimate is reasonable and comparable to the results in the CPS. Consequently, we conclude that inferences from the CPS mail and early voting results are reliable.

on election day.[17] Early voters were also more likely than election day voters to be African-American, a result we attribute to the massive get-out-the-vote efforts by the Obama campaign that targeted likely supporters. Most notable is this: in states with early voting, even combined with other election laws, voters are simply less likely to vote.

There is an alternate and more direct way to demonstrate that early voters, as a group, are more likely to vote than voters who cast their ballot on election day. We use the predicted probabilities of voting generated by the first individual level model of the vote in Table 2. This model generates a vector comprised of an estimated probability of voting for each respondent in our sample. We can compare the average estimated voting probabilities of early voters and election day voters, using a straightforward *t*-test of means. Early voters have an average predicted probability of voting that was more than is 2.1 percentage points higher than election day voters ($t = 13.44$, $p < .0001$).

The results of both empirical tests are consistent with our hypothesis that early voting is not bringing new voters into the electorate. Instead, it serves more as a convenience for those already likely to vote. Remove early voting, and most (if not all) of these early voters would simply show up on election day.

Early Voting Reduces Election Day Stimulation

The first column in Table 3 shows that the presence of early voting in a state facilitates abstention rather election day voting. The fact that early voters probably would have voted anyway can explain why early voting does not *raise* turnout, but it does not explain why it would

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[17] This may seem a tautology, in that we are comparing the probabilities of voting across two groups that we know have voted. How can we say that early voters are more likely to vote than election day voters, when we know that both groups have actually voted? The difference arises when we move beyond our sample, to make inferences about the population. From our multinomial logit, we can say that early voters have demographic profiles that make them likely voters. When compared to those in our sample who voted on election day, we can say that

depress turnout. Here, we raise the second part of our explanation that early voting robs election day of the stimulating effect it would otherwise have on nonvoters or marginal voters.

As discussed above, stimulation can come via both the sense of social and civic activities that surround election day, as well as the strategic responses by parties to the incentives created by election laws. On the former, there is some empirical evidence that suggests the importance of election day. One study shows that election day social activities increase turnout (Addonizio, Green, and Glaser 2007). Another analysis shows a negative relationship between early voting and individual-level social capital, implying that the ability of social networks of friends and neighbors to induce turnout is weakened when early voting is in place (Kropf, Swindell, and Wemlinger 2009).

Political campaigns also strategically consider the political environment as they choose to invest resources to mobilize voters and increase turnout. Partisan contacts, direct mail, phone calls, leafleting, and mass media (Green and Gerber 2008), levels of competition and campaign spending (Jackson 1997, 2002), campaign advertizing (Freedman, Franz, and Goldstein 2004),[18] campaign yard signs (Panagopoulos 2009), texted reminders to vote (Dale and Strauss 2009), party transfers to states and campaign visits by presidential candidates (Holbrook and McClurg 2005) all have an impact on turnout. Campaigns may draw down their mobilization efforts when they have already brought in large numbers of early voters; there may be less advertising, or fewer efforts to organize election day activities. When much of the eligible population has already voted in advance of election day, there is less payoff for continued get-out-the-vote activities. If this reduced activity in high early voting states is not counterbalanced by the increased convenience of voting prior to the election, the net effect would be negative.

[18] But see Krasno and Green (2008) for experimental evidence that shows no effect of campaigns ads on turnout.

While comprehensive empirical tests of this point await further study, we present some preliminary evidence from political advertizing in the 2008 presidential campaign. Here we draw upon data on television ads from the Wisconsin Advertising Project. Campaign activity provides an admittedly incomplete but reasonable proxy for elite efforts to stimulate turnout. Our theory suggests that, like other forms of mobilization, television advertising should be lower in early voting states.

We plot advertising volume by day, separately for states with low and high levels of early voting. Because advertising is heavily concentrated in the most competitive states, we begin by isolating battleground states, defined here as states where Pollster.com reported that the major party nominees were separated by less than 10 points at the opening of the early voting period. Having limited the analysis to these competitive states, we further distinguish them based on the degree of early voting, using the simple threshold of whether more or less than 50% of total votes were cast early.[19] Figure 4 shows daily television advertising volume using circles to represent periods when the early voting window was open. The figure reveals two important patterns. First, the overall level of campaign stimulation (as represented by advertising) is lower in states with substantial early voting. Even among this set of battleground states, the ad volume is dramatically greater when early voting is less common. Second, in states with less early voting, campaign intensity was high and continued to increase until election day. In contrast, in states with extensive early voting, advertising volume was substantially lower and does not appear to have risen monotonically up to the election. Instead, advertising leveled off or even declined after the opening of the early voting period. In short, even after conditioning on battleground status, early voting states saw less overall campaign mobilization, and that

[19] States with no early voting are thus categorized as having less than 50% early voting.

mobilization peaked earlier in the election period, removing much of the stimulation that could have happened close to or on election day. This pattern of mobilization has little negative effect for likely voters, but will do little to encourage marginal voters who might otherwise be captured by mobilization efforts close to election day.

Figure 4 about here

While this paper offers evidence on differential effects of election laws on turnout, and has proposed a broad explanation for why those effects occur, there is clearly a great deal for future research to consider. At the broadest level, the question of how the state shapes the exercise of the franchise is one of central interest to political science. We offer evidence that the election reform that is most popular among state governments may inadvertently resulted in fewer voters at the polls, and provide a theory to explain this counterintuitive result. Election reform has goals other than increasing turnout, including minimizing costs and administrative burden, but if policymakers wish to heighten voter participation they would be wise to consider both the direct and indirect consequences of their actions. Typically policy makers focus on the immediate effects that new laws have on the cost of voting but seldom consider how those compare to the secondary effects of mobilization, both strategic and nonstrategic. A related research question that deserves attention is whether some groups are affected more than others by these laws.

There is also need for more comprehensive evidence to specify the precise mechanisms for how early voting demobilizes voters. This would include analysis of campaigns' get-out-the-vote efforts, location of field offices, party transfers, and other efforts aimed at stimulating turnout.[20] If our claim is correct, mobilization efforts should diminish in battleground states with high levels of early voting when compared to competitive states in which a smaller percentage of the electorate has already voted. Broadening the conception of mobilization to other, nonstrategic mechanisms such as local news coverage, actions by election administrators, discussion with friends and family, and other signs of election day activity should offer evidence of the degree to which the negative impact of early voting on turnout is driven by the civic nature of election day itself.

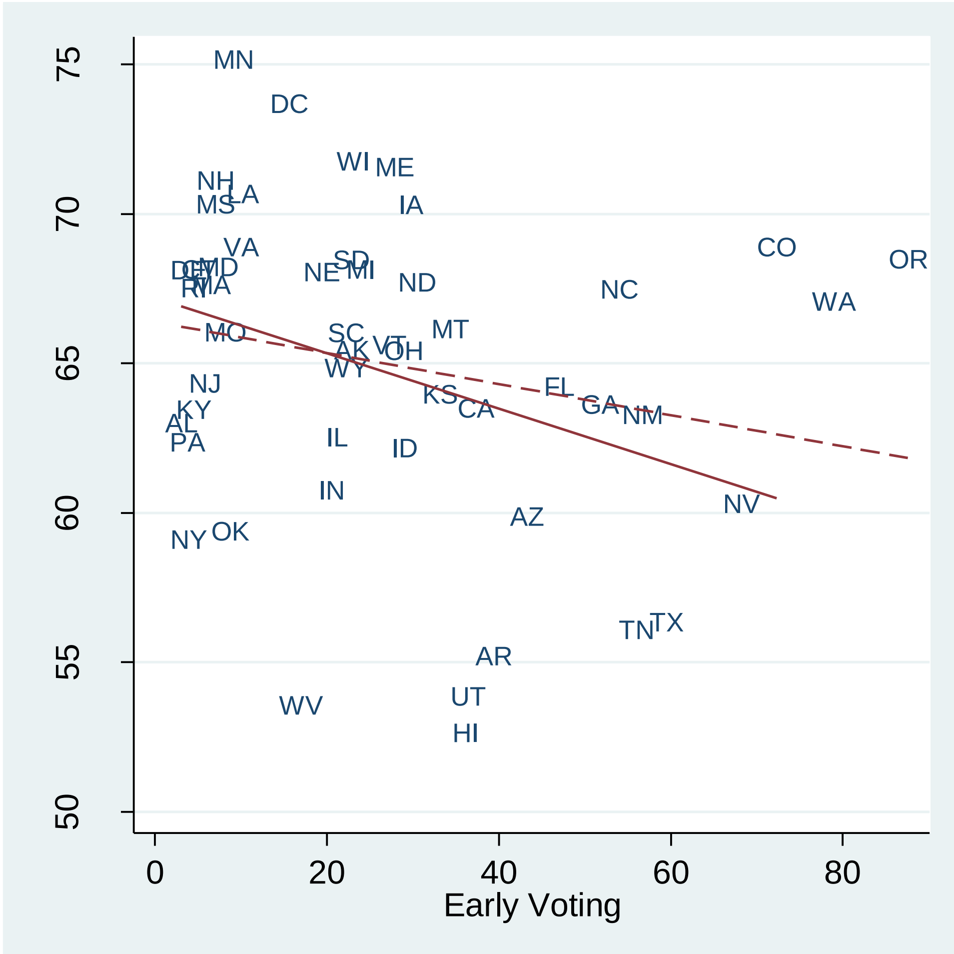
Conclusion

We have shown that election reforms cannot be studied in isolation. Instead, researchers must consider the different combinations of voting reforms as the actually appear in the states. This is the only way to capture the full effects of these complex, overlapping, and often arcane rules. Each policy instrument has the potential to shape the costs of voting both directly and indirectly, and these net effects are, surprisingly, sometimes negative.

Our unambiguous empirical claims are based on multiple data sources and methods: despite being the most popular election reform, early voting depresses net voter turnout and the only consistent way to increase turnout is to permit election day registration. Early voting reduces turnout by robbing election day of its stimulating effects. This depressant effect is only partially offset if SDR is present, or if EDR offers a vehicle for the last-minute mobilization of marginal voters. This result upends the conventional view that any action that makes voting easier will raise turnout.

[20] Our initial analysis of party transfers finds that national parties transferred less money into early voting states, even after controlling for competitiveness and other factors.

Figure 1: Early Voting and Turnout in the States



Note: Dotted regression line represents all states. Solid regression line omits OR and WA.

Figure 2: Combinations of EDR, SDR, and Early Voting in 2008

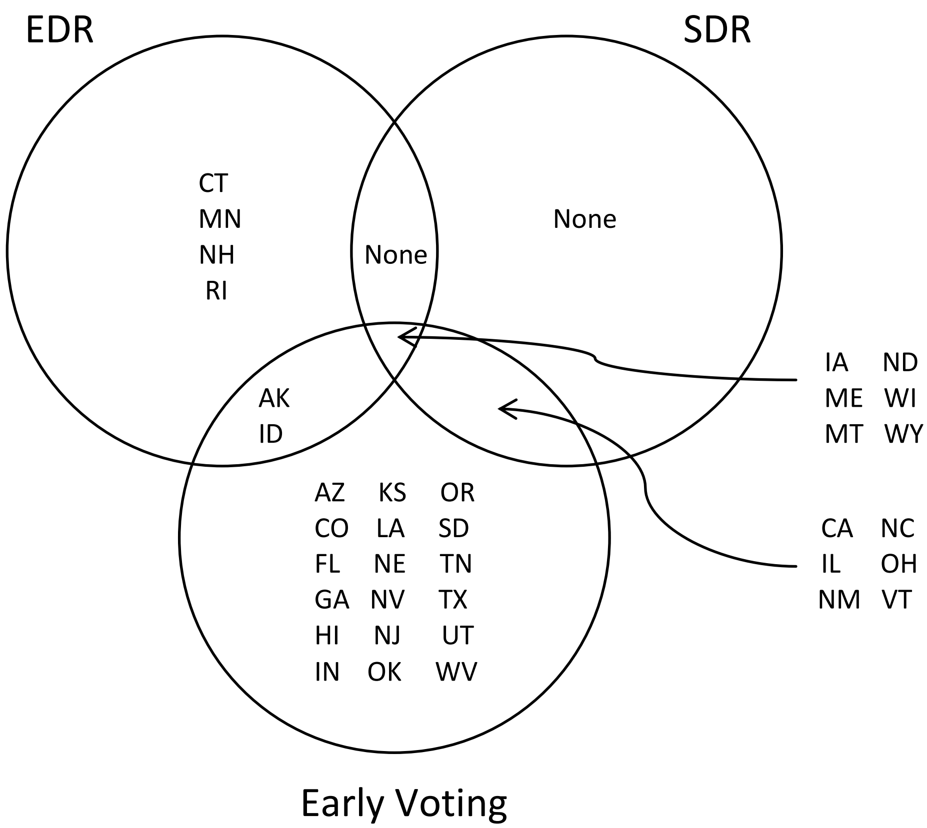


Figure 3: Effects of Election Laws on Individual Turnout

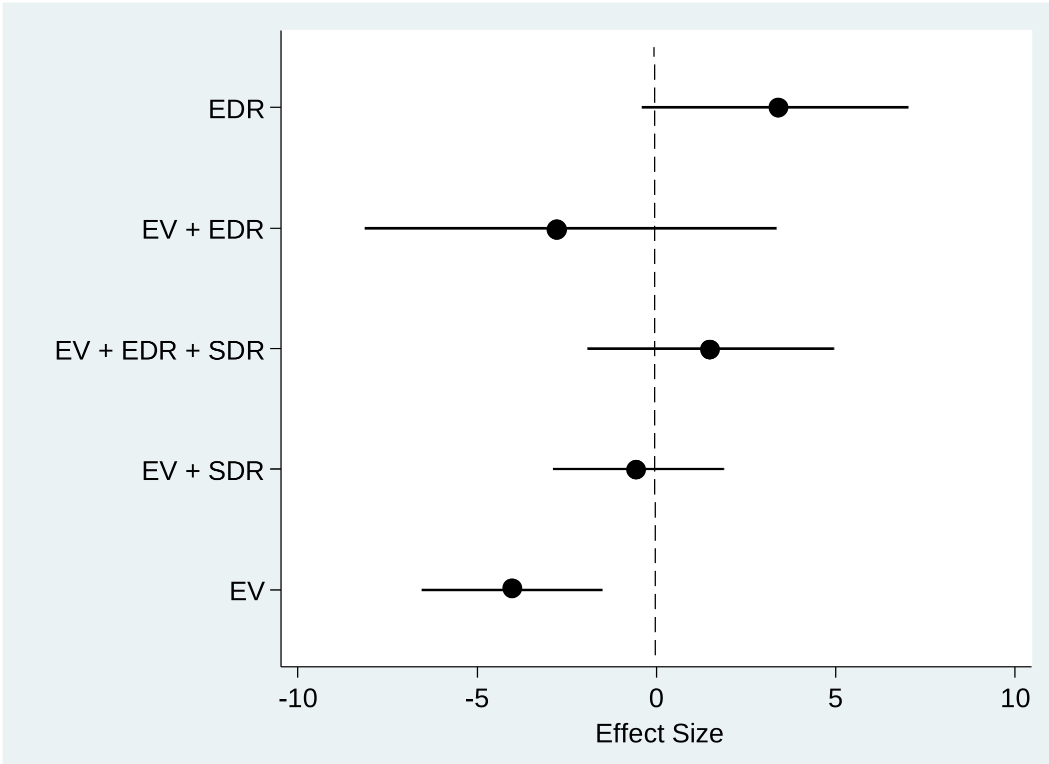


Figure 4: Campaign Advertizing in Battleground Status by Level of Early Voting

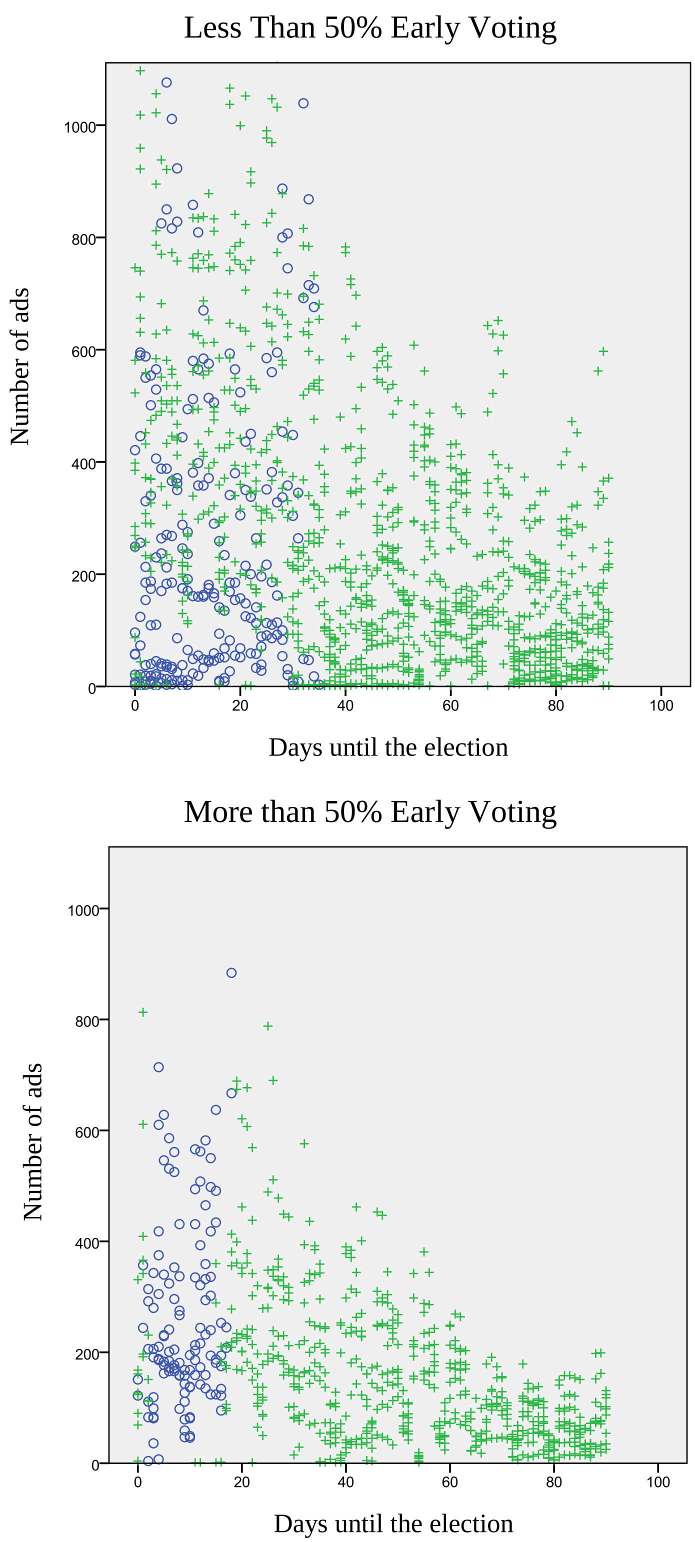


Table 1: Regression Estimates of Election Laws on County Turnout

EDR	6.61*
	(3.40)
EDR + Early Voting	4.96***
	(1.02)
EDR + SDR + Early Voting	9.56***
	(1.75)
Early Voting + SDR	1.27
	(1.19)
Early Voting	-2.95**
	(1.27)
Closing Date	.04
	(.07)
ID Requirement	-.06
	(1.12)
Ex-Felons Barred	1.57
	(1.32)
Percent African-American	.05
	(.042)
Percent Hispanic	-.27***
	(.03)
Median Income	.0002***
	(.0001)
Percent College Graduates	.27***
	(.05)
Percent 65 or Older	.34***
	(.87)
Population (in 100,000s)	-.04
	(.03)
Population Density	-.0002***
	(.00002)
Campaign Competitiveness	.22***
	(.05)
Oregon	5.04***
	(.92)
Washington	4.66***
	(1.58)
Constant	35.77***
	(4.50)
R^2	.705
N	3,109

***$p < .01$ **$p < .05$,*$p < .10$, two-tailed test.
Cell entries are OLS regression estimates with robust standard errors clustered by state in parentheses. Estimates are weighted by population.

Table 2: Logit Estimates of Election Laws on Individual Turnout

EDR	.17* (.10)
EDR + Early Voting	-.12 (.14)
EDR + SDR + Early Voting	.08 (.09)
SDR + Early Voting	-.02 (.06)
Early Voting	-.20*** (.06)
Education	.60*** (.02)
African-American	.73*** (.06)
Hispanic	-.06 (.1)
Self-Reported Vote	.83*** (.03)
Naturalized Citizen	-1.05 *** (.17)
Naturalized 10+ years	.47** (.16)
30-day Registration close	-.12** (.06)
Married	.43*** (.02)
Residence 1 Year	.27*** (.03)
Income	.08*** (.002)
Gender	.15*** (.02)
Age	.025*** (.002)
Age 18-24	.42*** (.04)
Age over 75	-.12* (.05)
South	-.04 (.06)
Campaign Competitiveness	.005 (.003)
Oregon	.16*** (.05)
Washington	.04 (.05)
Constant	-3.85*** (.057)
Pseudo-R^2	.145
Percent Correct Predicted	73.4
N	74,327

***$p < .01$ **$p < .05$,*$p < .10$, two-tailed test.
Cell entries are logit coefficients with robust standard errors clustered by state in parentheses.

Table 3: Multinominal Logit of Election Laws on Individual Turnout

	Did Not Vote	Voted Early in Person	Voted Early by Mail
EDR	-.15	-.27	-.48
	(.10)	(.45)	(.34)
EDR + Early Voting	.38**	2.15***	.87*
	(.17)	(.41)	(.48)
EDR+ SDR + Early Voting	.18*	2.03***	.89**
	(.10)	(.44)	(.35)
Early Voting + SDR	.37***	1.99***	1.43***
	(.09)	(.47)	(.44)
Early Voting	.52***	2.09***	1.05***
	(.11)	(.42)	(.38)
Education	-.55***	.19***	.18***
	(.02)	(.03)	(.03)
African-American	-.68***	.54***	.32**
	(.07)	(.14)	(.12)
Hispanic	.06	.19	-.05
	(.12)	(.16)	(.17)
Self-Reported Vote	-.84***	.04	-.07**
	(.03)	(.03)	(.04)
Naturalized Citizen	1.04***	-.07	-.01
	(.18)	(.22)	(.16)
Naturalized 10+ years	-.47***	-.18	.09
	(.17)	(.33)	(.19)
30-day Registration close	.14	.27	-.07
	(.09)	(.27)	(.29)
Married	-.46***	-.04	-.18***
	(.03)	(.05)	(.05)
Residence 1 Year	-.34***	-.26***	-.24***
	(.04)	(.05)	(.06)
Income	-.08***	.03***	.02**
	(.004)	(.009)	(.009)
Gender	-.12***	.09***	.13***
	(.02)	(.03)	(.03)
Age	-.02***	. 02***	.03***
	(.002)	(.002)	(.003)
Age 18-24	-.27***	.28***	.93***
	(.04)	(.10)	(.14)
Age over 75	.21***	-.11	.33***
	(.06)	(.07)	(.09)
South	.24**	1.32***	-.48
	(.04)	(.39)	(.26)
Campaign Competitiveness	-.002	.02	.02
	(.003)	(.01)	(.02)
Oregon	1.91***	1.05**	4.64***
	(.074)	(.41)	(.31)
Washington	1.56***	.39	3.89***
	(.08)	(.42)	(.33)
Constant	3.47***	-5.31***	-4.43***
	(.16)	(.65)	(.46)

****p* < .01 ***p* < .05,**p* < .10, two-tailed test. Reference category is voting on election day. *N* = 74,174
Cell entries are logit coefficients with robust standard errors clustered by state in parentheses.

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