Election Laws, Mobilization, and Turnout

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Advocates, journalists, and politicians frequently advocate changes to election laws out of the belief that making voting easier will increase 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 voters to cast ballots. We challenge this conventional wisdom, and show that the most popular reform – early voting – actually *decreases* turnout, a conclusion that has significant consequences for policy. Early voting depresses turnout by diffusing attention to the election and reducing the importance of election-day mobilization.

We argue that voting rules affect not only individual voters, but also change the nature of mobilization in those voters' electoral environments. It may seem obvious that campaigns adapt to different voting rules by altering their strategies and mobilization tactics, but much of the existing voting literature fails to account for such interactions. Moreover, early voting also changes nonstrategic mobilization by family, friends, and the media in important ways.

We conclude that early voting appeals most to those who are already most likely to vote. Our empirical results show that early voters are more highly educated and wealthier than those who cast their ballot on election day (though in 2008, African Americans were significantly more likely to vote early). This conclusion is based on both aggregate data, using county level election returns from the 2008 presidential election, and individual-level analysis of the November 2008 Current Population Survey. Several methodological checks verify that these results are robust.

A key methodological innovation is that we estimate the effects of different voting rules, both in isolation from, and in interaction with, each other. The reforms we analyze – election day registration (EDR), early voting, and same day registration (SDR) – appear by themselves

and in different combinations, each of which may have a different effect on turnout. The existing literature on early voting draws careful distinctions between the different types of early voting systems, such as mail-in absentee or in-person absentee. These differences matter. But at the same time, scholars have paid less attention to whether early voting systems also include SDR or EDR, differences which also matter. Early voting has far less effect if voters still have to register 30 days before election day; the convenience of additional voting opportunities is irrelevant to someone ineligible to vote because of a missed deadline.

We are particularly interested in the synergistic effects of early voting EDR. The 2008 election marked the first time that this combination was available in enough states to permit an accurate estimation of its effect on turnout. We find that the turnout-increasing effect of election day registration offsets the depressive effects of early voting.

The remainder of the paper unfolds as follows. We begin by providing a picture of prior research on state election laws and turnout. We argue that, much like interactions among drugs given to a patient, that distinct combinations of EDR, SDR, and early voting need to be considered, as otherwise we risk conflating the effects of the different practices. We address this problem by classifying all of the potential permutations, and estimating separate effects for each. We contend that while EDR should increase turnout, early voting by itself should not. We test this hypotheses by examining the impact of different voting rules on aggregate turnout levels and the individual probability of voting.

We demonstrate that packages of laws that include EDR generally increase turnout, but that early voting options by themselves decrease turnout. We conclude by discussing the broader implications of this research for future innovations and reforms in election administration.

Previous Research

Reorganizing the voting process to foster turnout has long been an interest in both the academic and policymaking communities.[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 common reforms are election day registration, same day registration, and especially early voting. Here we set out the state of research on these practices, and note some problems in the literature.

Election day registration (EDR) permits eligible voters both to 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 the 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 problems posed by early registration closing dates. The effects have long been recognized. Thirty years ago, Wolfinger and Rosenstone (1980, 61) summarized the effects: "[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." 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 long stream of research has confirmed the effects of EDR. The registration closing date is the most consequential aspect of registration, in part because it disenfranchises recent

[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.

movers and requires voters to take initial action as much as a month before election day (Squire, Wolfinger, and Glass 1987; Timpone 1998; Highton 2004; Hershey 2009). Minnesota, Wisconsin, and Maine, the first states to implement election day registration, consistently lead the nation in voter participation. A sizeable number of voters take advantage of EDR when it is available: in 2008, 15.6% of voters in Minnesota, 16.5% in Wyoming, 13.5 % in Idaho, and 11.4% in Wisconsin registered to vote on election day (EAC 2009, Table 5). 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."[3]

A second innovation is permitting voting outside of the normal election day process. Although the policies take different forms, they all share the defining feature of eliminating the need 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).[4] 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, early voting was the most touted reform in recent elections. Voting scholar John Fortier pointed to the practice as evidence that "United States is in the midst of a

[3] Throughout, we express turnout as a percentage of the voting age population.
[4] Absentee voting can impose different requirements. 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).

revolution in voting" (2006, 1). We consider **early voting** to exist in states in which registrants can cast ballots without excuse before election day. 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. In 2008, 21 states allowed early voting, either by mail or in person.[5]

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 study affected turnout in either presidential or midterm elections.[6] Other studies have shown that none of the forms of early voting, other than Oregon's unique vote-by-mail system, improves turnout (Fitzgerald 2005; Giammo and Brox Forthcoming; Gronke et al. 2008; Oliver 1996; Primo, Jacobsmeier, and Milyo 2007; Scheele et al. 2008; cf. Wolfinger, Highton, and Mullin 2005).[7]

We argue that the existing literature on early voting has missed a crucial aspect of the process, which is whether early voting is combined with same day registration (SDR) or election day registration. **SDR** 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." Seventeen states had

[5] Michael MacDonald, "(Nearly) Final 2008 Early Voting Statistics," updated January 11, 2009, <http://elections.gmu.edu/Early_Voting_2008_Final.html>. Also see Paul Gronke's Early Voting Information Center at <http://www.earlyvoting.net/blog/>.

[6] 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 with state fixed effects.

[7] Stein and Vonnahme (2008) find a small positive effect of non-precinct voting centers on turnout among younger, infrequent voters and those who have not yet developed the voting habit.

early voting and SDR in 2008. And yet, despite its widespread use, we know of no studies that have analyzed SDR's direct effects on turnout.

Election Laws as Turnout Mechanisms

All three of the reforms we consider here – early voting, same day registration, and election day registration – are designed to increase turnout by lowering the direct legal costs of voting. But this simple logic belies the fact that the mechanisms connecting each reform to turnout are quite different. 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 convenience, 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 direct legal costs of voting, even though an overemphasis on these costs may miss the importance of indirect extralegal costs that are reduced by mobilization efforts that encourage potential voters to become actual voters. It is easiest for policymakers to see how an election law shapes direct legal costs. But social scientists also understand that election laws may indirectly affect the degree of mobilization, and thus the overall costs of voting. The net costs and not simply the legal barriers should be our focus.

We expect EDR to be a particularly effective mechanism for raising turnout, because it permits those who come late to the campaign to still become participants. Just as important, it does so without robbing election day of its stimulating effects. Early voting also lowers direct costs, but by focusing interest on the opening of the early voting period and spreading out

electoral activities over an extended time period, it simultaneously saps the mobilizing energy of election day. The effects of SDR and "one-stop shopping" will depend on the length and timing of the early voting window, and should be most apparent for voters who are on the turnout bubble, neither highly likely to vote or sit out (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. The same can apply to those who are extremely low likelihood voters; these citizens may simply be beyond the reach of any voting reforms. For voters close to the 50-50 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 new 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. Most reforms, in his view, are better at the latter. Our explanation for the expected depressive effect of early voting is that it robs election day of the stimulating effect it would otherwise have on nonvoters. Early voting siphons away and thus dilutes the concentrated activities of election day itself that would likely stimulate turnout. This stimulation is provided strategically by campaigns that engage in a media blitz as election day approaches. But stimulation also arrives nonstrategically from the local media who cover election day, from family and acquaintances who are discussing the election, and the visibility of polling places and other election day activities. Our theoretical view thus conceives of mobilization more broadly than simple contacting by campaign elites (Rosenstone and Hansen 1993). Several scholars have suggested as much when he speculates that a loss of the "civic day of election" could lower

turnout by lowering social capital (Fourtier 2006; Kropf, Swindell, and Wemlinger 2009; Thompson 2004). At least one empirical study shows that election day social activities increase turnout (Addonizio, Green, and Glaser 2007). Traditional election day is as much a social event as a political one. For at least some voters, it is the stimulation of the day's news, observation of activities as polling places, and conversations with friends and neighbors that gets them to the polls. When these activities are suppressed or diluted, so is the stimulating effect.

We refine this argument by identifying the key differences between EDR and early voting. In particular, we expect early voting to enhance retention, and EDR to enhance stimulation. Early voting should have a minimal effect on turnout, because it is mostly a convenience for those who were already planning to vote, not a method of bringing nonvoters into the booth. The 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.[8]

In fact, a few studies have found tentative and conflicting evidence that early voting may actually lower turnout.[9] This certainly runs counter to the conventional wisdom, as it is hard to see how making voting more convenient will result in fewer voters, although we conclude that this is precisely what happens. As initial evidence we present Figure 1, which plots overall voter turnout by the percentage of votes cast through early voting, using data from the Current Population Survey. The relationship is clear: higher early voting rates are clearly associated with lower overall turnout. The solid line is the bivariate regression line; the dotted line is the

[8] 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).
[9] Smith and Comer (2005) find negative effects, but others (Gronke et al. 2008; Leighley and Nagler 2009; Tolbert et al. 2008) find negative effects only in particular specifications.

regression line after omitting Washington and Oregon from the data (these states have unusual mail-in-balloting rules not analogous to those in any other states).

Insert Figure 1 here

A bivariate analysis, of course, does not capture the complexity of the overall relationship, and there are obviously intervening control variables that have to be taken into account. The clarity of the relationship, though, is certainly a hint of a counterintuitive underlying process. Before turning to multivariate analysis, we must first address concerns about the endogeneity of election laws.

Exogeneity of Voting Systems in Observational Research

We wish to estimate the effects of various election laws on voter turnout. A cross-sectional analysis assumes that laws are exogenous. Focusing on EDR, Hanmer (2009) has challenged the foundations of observational research into turnout effects, arguing that the most commonly used research methods are inappropriate and yield biased results. The problem, as he describes it, is that we cannot directly observe the quantity we are most interested in. In voting studies, we can observe the probability of a specific individual voting under one set of registration rules, such as early voting (as might exist in a particular state). We can observe the probability of another specific individual voting under a different set of rules (no early voting). What we *cannot* observe is 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. Conceptually, early voting is a "treatment" that is applied to some voters and not to others.

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. We assume that EDR, or the lack of it, is the cause of higher turnout levels, not the other way around.

It is possible, though, that the relationship runs in the other direction, and that the reason a state has EDR is because it has high turnout. Legislators might want to make sure that turnout stayed high, and enacted EDR out of a desire to make voting even more convenient. In this case, we could say that it was high turnout that caused the enactment of EDR. More commonly, there might be some unobserved variables that are related to both turnout and the choice of voting rules. Perhaps a state has a culture of broad participation and civic engagement, along with high levels of social capital, that produces high turnout and creates support for relaxed voting rules that place a premium on convenience and involvement. In this state, the implementation of EDR is itself a dependent variable, caused by the same variables that produce high turnout. Erikson and Minnite make this argument about voter identification laws (2009, 87). 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 and others are surely right to urge scholars to pay close attention to the assumptions that we are making when choosing methods and estimators. But we think he overstates the problem, for several reasons. First, the universe of states that have adopted different systems is now large and diverse, making it more difficult to make sweeping statements about why states adopted reform. Hanmer cites the example of a high-turnout state being likely to enact reforms that stimulate high turnout, and states with a history of discouraging participation as less likely to adopt reforms that encourage high turnout.

But in the case of early voting, the states that have it are so diverse that it is unlikely that we think it reasonable to assume that the practice is exogenous, or at least not due to some unobserved variables that correlate with turnout. We find early voting 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).

To see if there might be some underlying or unobserved 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 highly correlated with turnout (r = 0.59 for the 2000 election, r = 0.29 for the 1996 election). Since the index is based on state policies in the 1980s, it predates many states' move to early voting. If the index were related to early voting, it would be strong evidence of the endogeneity of voting systems. But there is no relationship at all between political culture and early voting. 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). So we can reject – decisively – the notion that a state's decision to enact early voting is related to some underlying political disposition.

Second, in the instances where scholars have analyzed the effect of voting rules 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, difference-in-difference, and even experimental methods produce results similar to more traditional cross-sectional or individual techniques (Brox and Giammo forthcoming; Bowler et al. 2001; 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 concluded that the difference in the results "is not sufficiently strong to allow one to reject the probit models" in his analysis (2007, 20).

Empirical Results

Data and Methods

The first step is to categorize states according to their voting laws. As noted early, we view these policies the way a physician views prescription drugs. Each can have an effect in isolation but we must also consider how they interact. Many states in fact adopt multiple reforms, so each distinction combination should be evaluable. Figure 2 is a Venn diagram that displays the different combinations of voting rules in place for the 2008 presidential election and how they can combine. In practice, there are thirty-eight states employing one of the five possible combinations of the rules. (The twelve states that have none of the three practices are not listed.) The most common approach, used by 19 states, is simply to allow early voting for voters who are already registered. We count as early voting states that permit no-excuse absentee ballots (such as Wisconsin), but exclude states that require voters to give a reason in order to receive an absentee ballot (as in Minnesota).[10] We classify twelve states as having EDR in 2008.[11]

[10] 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. Codings are drawn from the National Conference of State Legislature's listing at

Figure 2 about here

Our criterion for defining SDR is that the practice must be widely available to eligible voters without significant administrative barriers. We thus excluded states that allowed some form of "one-stop shopping" only to limited portions of the population. For example, Colorado permits SDR only for a small set of "emergency" registrants who moved across county lines after the closing date. As we define it, a dozen states permitted some form of SDR in 2008, permitting voters to register and vote anywhere from one month prior to the election, up to the day before. And, as we noted earlier, we define early voting as the opportunity to cast a ballot prior to election day, either in person or by mail, without excuse.

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 relative to the baseline states that have none. So when previous work has estimated the effects of SDR, it has unwittingly estimated the joint of effects of SDR and early voting. We separate these laws for the first time.

<http://www.ncsl.org/LegislaturesElections/ElectionsCampaigns/AbsenteeandEarlyVoting/tabid/16604/Default.aspx> accessed in July 2009.

[11] The states commonly considered as having EDR are Idaho, Iowa, Maine, Minnesota, Montana, New Hampshire, North Carolina, Wisconsin, and Wyoming. After carefully reading 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, both 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.

County Level Regression Analysis

To determine the effects of EDR, SDR, and early voting on turnout, we analyze data from the 2008 presidential election at two levels: a county-level dataset individual data from the Current Population Survey (CPS) November 2008 Voting and Registration Supplement. 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.

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 in Figure 2. The signs and significance levels of these coefficients will suggest the contribution that each distinct combination makes to voter turnout. To avoid spurious findings, we include an array of control variables generally known to affect turnout, and estimate multiple specifications to increase confidence in the robustness of the findings. We also adjust the standard errors to account for clustering of counties by state (Erikson and Minnite 2009; Primo, Jacobsmeier, and Milyo 2007).

The control variables include state 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. To the degree that these laws matter once our new variables are included, we expect all three to have negative effects. Demographic controls for each county include the percent black, 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. The effect should be negative because a larger gap between the candidates ought to be reflected in lower 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.

We show two specifications of the model in Table 1. The first is based on the raw data while the second is weighted by county population to account for the wide variance in county populations that may contribute to heteroskedasticity.

The findings from Table 1 indicates that EDR alone or in combination with other laws has positive effects on turnout. EDR by itself has an effect that ranges between 6.7 and 7.8 points for the two models. In both alternative models any combination including EDR increases turnout by 4.2 to 11 percentage points. In contrast, early voting on its own has a negative effect that ranges between 3.5 points to 5.8 points, and the combination of SDR and early voting has no effect. Control variables mostly perform as expected. Turnout is higher in county with more African-Americans, higher incomes, more college graduates, smaller and less dense populations, and where the McCain-Obama campaign was close.

Table 1 about here

The results of these county regression models suggest 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 results in a significant and positive outcome. States that have all three approaches see sizeable increases in turnout. Indeed, any combination that includes EDR increases turnout.

Cumulatively, the results suggest that creating the opportunity for voters to "one-stop shop" offers a way to turn the negative of early voting into a net positive. Figure 3 displays the estimated effects and 95 percent confidence intervals for both the weighted and unweighted models din graphical form for easy comparison. From this graphic it is apparent that early voting on its own is unlike all other combinations of laws, each of which has no effect or a positive effect on turnout.

Figure 3 about here

As a brief digression, we note that one other reason prior studies of SDR have found inconsistent results is that they have not taken into account variation in SDR is implementation across the states. We suspect, in particular, that the length of time in which "one-stop shopping" is available will make a substantial difference in turnout. In 2008 this window ranged from just one day in New Mexico to over 40 days in three states. To investigate this possibility we reestimate model II on states with SDR, and includes a new key variable: the length of time the SDR window is open. The results in Table 2 show that each additional day of SDR availability results in a .29% increase in turnout. Increasing the window length by 12 days (the standard deviation of the variable) thus increases turnout by 3.5 points. The control variables largely operate as expected. The length-of-window finding reinforces our expectation that implementation matters. Two otherwise similar states could both have SDR "on the books," but the state that offers it for a longer time will see a greater positive turnout effect.

Table 2 about here

Individual Level Regression Analysis

We now turn to estimating turnout effects at the individual level. Here we are interested in the factors that make individuals more (or less) likely to cast a ballot. Most individual-level

turnout analysis takes a standard form, using logit or probit regression with the vote (or reported vote) as the dependent variable, and with the right-hand side consisting of various demographic and systemic independent variables that purport to capture the important causal factors.

Our individual-level analysis uses the 2008 Voting and Registration Supplement File of the CPS. 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.

The voting item is self-reported, asking whether people voted in the 2008 presidential election (there is also a proxy reporting feature, which we describe below): respondents can answer "yes," "no," "don't know," "refuse to answer," or have no response recorded. Following the common 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 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.[12] 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.[13]

[12] 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.
[13] 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). To complicate matters further, the CPS has an unusual feature in which data on respondents can be provided by other members of the household if the respondent is not home at the time the surveyor visit occurs. Having one's vote status reported by proxy quite obviously introduces another possible source of misreporting. Although there is no good way to correct for misreported voting responses (Katz and Katz 2009), the large literature on the

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, and separate dummy variables for Oregon and Washington.

The results, reported in Table 3, are roughly consistent with the aggregate model. The most important finding is that early voting has the same effect as in the individual model, lowering turnout by over four percentage points. Most of the other registration rules and combinations have no statistically significant effect. As in the aggregate model, it appears as though EDR and SDR can offset the negative effects of early voting when the three practices are combined. EDR has a modestly positive effect on the individual likelihood of voting, marginally significant, but raising turnout by about three percentage points.

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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). Overreporting is most common among people otherwise most likely to vote, in part because the social pressure is greatest in this cohort (Bernstein, Chadha, and Montjoy 2001).

Figure 4 presents the effects translated into probabilities, along with the 95 percent confidence intervals. It is again clear that EDR raises turnout, early voting lowers it, and other combinations tend to have little effect.

Figure 4 about here

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, we pre-processed both the individual and aggregate data using matching methods before estimating our models. The matched data allow us to estimate causal effects more accurately and avoid making assumptions about functions form. The results were nearly identical, with only somewhat larger standard errors. 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 by state. The effects were smaller than the ones estimated here, but confirmed that early voting decreases turnout and EDR increases it. These results are available from the authors upon request.

Early Voters are Likely Voters

Both the county-level and individual-level analyses point to the same conclusion: early voting by itself depresses turnout, and the depressive effects can be offset when early voting is combined with SDR. How is it possible that the enormous additional convenience of early voting can drive turnout *down*? Recall that our argument has two pieces, which together make the case that early voting leads to lower turnout.

The first piece of the puzzle is that early voting serves to give already likely voters additional opportunities to submit their ballot. Rather than bring new voters into the electorate, early voting simply 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 hypothesis is that early voting is more likely to provide opportunities to those individuals *already likely to vote*. All other things being 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 offer a way to answer this question. Respondents are asked if they voted in person or by mail, and whether they voted on election day or before. 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 (our definition of early voting). The actual figure for 2008 is 30% (McDonald 2009). 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. In the CPS sample, 15.9% of respondents reported voting by mail.[14] Esing EAC data, we estimate the actual number of mail-in votes to be 18.6% of the total vote in 2008.[15]

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 the basic individual-level model, are reported in Table 4. In the model, the baseline (or excluded) category is voting on election day, so all coefficients are interpreted relative to those.[16]

Table 4 about here

[14] 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.

[15] 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]). Based on the EAC data, we know that 99.8 million of these votes were cast in person, either on election day or earlier. We assume that all remaining absentee and UOCAVA votes were mailed in, giving a total of 23.1 million mail-in votes. To this we add the 1,816,596 ballots submitted in Oregon's all-mail election system, giving us a total of 24,941,987 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 think that very 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.

[16] We have updated our multinomial logit analysis to include dummy variables for Oregon and Washington that we added to the baseline logit model, but the substantive interpretation of the variables of interest do not change. These will appear in the next version of the paper.

In terms of election laws, the results show that in states with EDR, voters are significantly more likely to vote on election day rather than early or abstain. In contrast, in states with no-excuse early voting, voters are much more likely to vote early, but are also more likely to abstain. Because they combine early voting and one-stop shopping, the other three combinations of laws contribute to more abstention but also higher levels of early voting. Is it only EDR in isolation that raises turnout and election day voting; it is only early voting in isolation that reduces turnout and election day voting.

The other coefficients we are interested in are those which we know indicate a higher likelihood of voting, based on existing research. The coefficients for education, income, age, and gender are all positive and statistically significant in columns 3 and 4, telling us that early voters score higher on these dimensions, and are therefore more likely to vote than election day voters. Early voters are older, wealthier, more educated, and more likely to be women, all variables 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 on election day.[17] We can also state with high confidence that early voters were far more likely than election day voters to be African American, a result we attribute to the massive get-out-the-vote (GOTV) efforts by the Obama campaign.

There is a 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

[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

voting generated by the first individual level model of the vote (Table 3). 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 is more than is 2.1 percentage points higher than election day voters ($t = 13.44$, $p < .0001$). Early voting is not bringing new voters into the electorate. Instead, as we have emphasized, it serves more as a mechanism of convenience for those already likely to vote. Remove early voting, and these early voters would simply show up on election day.

Early Voting Reduces Election Day Stimulation

The fact that early voters probably would have voted anyway can explain why early voting does not *raise* turnout, but it does explain why it would *depress* turnout. Here, we raise the second part of our explanation that that early voting robs election day of the stimulating effect it would otherwise have on nonvoters (or marginal voters). There is a large literature demonstrating the impact of political campaigns on mobilizing voters and increasing 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

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

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. We believe that the stimulation provided by a single election day comprises much more than strategic elite mobilization, including such things as discussion in the workplace and extensive coverage on local news, but campaign activity is a reasonable proxy for how much electoral stimulation is occurring.

While comprehensive empirical tests of this point await further study, we provide some preliminary evidence from political advertizing in the 2008 presidential campaign. Here we draw upon data on television ads from the Wisconsin Advertising Project. As an illustration, Figure 5 displays the airings from the McCain campaign in California, with blue dots indicating days when early voting was in place. Rather than ramping up to election day, the ads are clearly clumped around the beginning of early voting in the state on October 6th. While this could be seen as a symbolic gesture or an act of desperation (given that Obama had a large lead in California), the 1,637 ads the McCain campaign ran in the nine days before and after the start of early voting are clearly timed to influence early voters.

Figure 5 about here

To show this more generally, we plot advertising volume by day for states with different levels of early voting. Figure 6 isolates battleground states from non-battleground states (using a difference of 17 points in the two-party vote to identify them) and states with more or less early voting (using 50% of total votes cast to identify them). There were no states that were both battlegrounds and with more than 50% early voting, so this leaves just three combinations to analyze, but the most useful distinction is across levels of early voting in battlegrounds. Little advertising was done in non-battleground states. The figure shows that in states with lower

levels of early voting, campaign intensity was high and continued to rise up 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, it seems that advertising leveled off or even declined after the opening of the early voting period. In short, even conditional on battleground status, early voting states saw less overall campaign mobilization and that mobilization peaked earlier, removing much of the stimulation that could have happened close to or on election day.

Figure 6 about here

More comprehensive tests of the demobilizing effects of early voting should include analysis of campaigns' get-out-the-vote efforts, location of field offices, party transfers, and other efforts aimed at stimulating turnout.[19] 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 forms such as local news coverage, discussion with friends and family, and other signs of election day activity should provide even more evidence that election laws that reduce direct voting costs but also result in higher indirect costs can indeed result in lower levels of voter turnout.

Conclusion

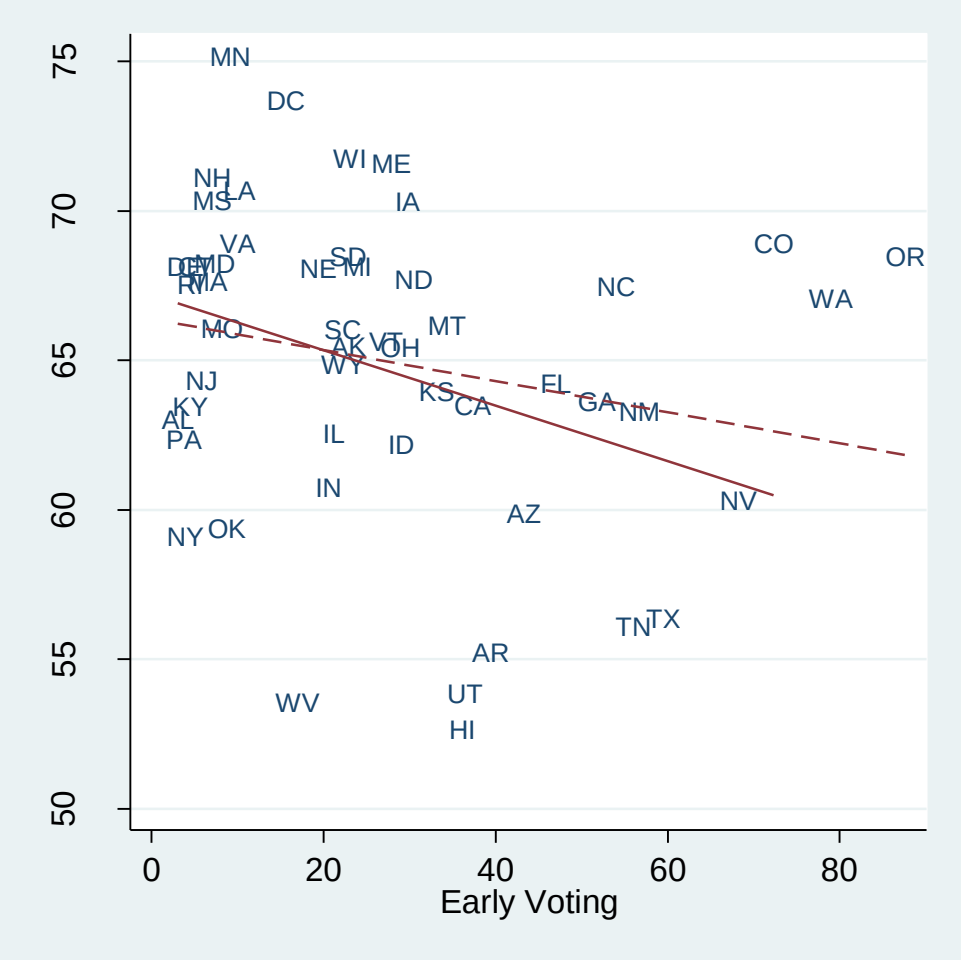
We make one empirical claim and one methodological contribution. Methodologically, we have shown that election reforms cannot be studied in isolation. Instead, researchers must consider the different combinations of voting reforms as the actually appear, and note the differences in what may appear at first look the same practice such as same-day-registration laws

[19] 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.

with different windows. This is the only way to capture the full effects of these complex, overlapping, and often arcane rules.

Our empirical claim is unambiguous: among all of the potential combinations of reforms, the only consistent way to increase turnout is to permit election day registration. Same day registration is a "second best" solution, marginally increasing turnout if the window for registration is sufficiently long. We conclude that early voting might bring out some new voters, on net it reduces turnout by robbing election day of its stimulating effects. This depressant effect is only offset if election day registration is also present to provide a vehicle for the last-minute mobilization of marginal voters. Early voting has become the most common reform in recent election cycles, and our findings show that unless it is combined with either a prolonged period of SDR, or EDR, the result will be lower net turnout. One might reform elections for many reasons beyond increasing turnout, including such considerations as cost 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.

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

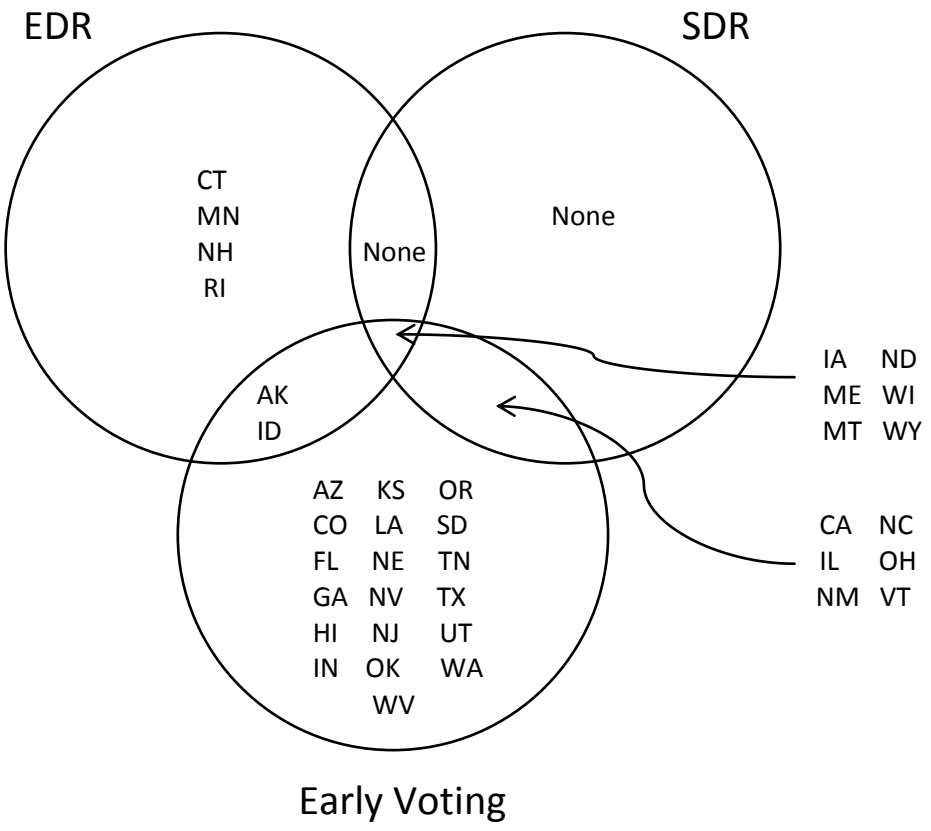


Figure 3: Effect of Voting Laws on Aggregate Turnout

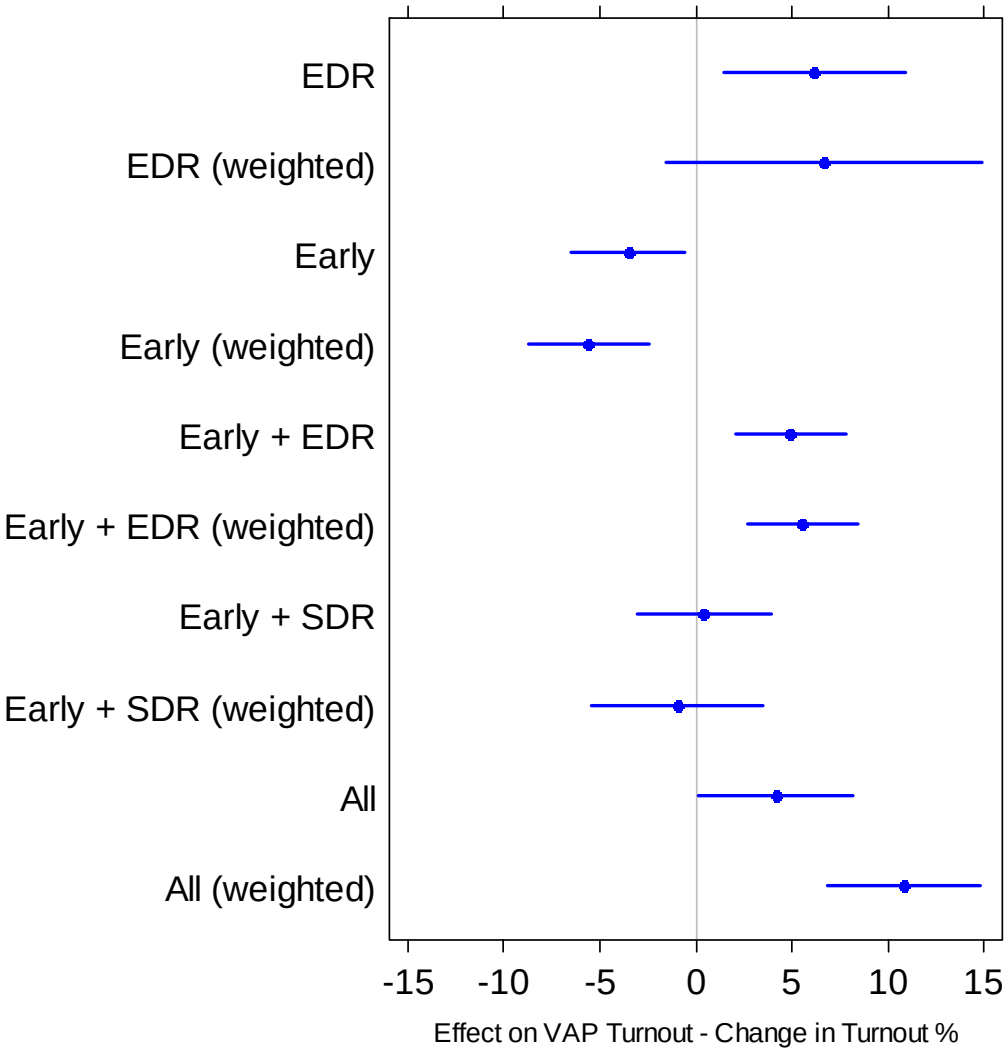


Figure 4: Effect of Voting Laws on Individual Turnout

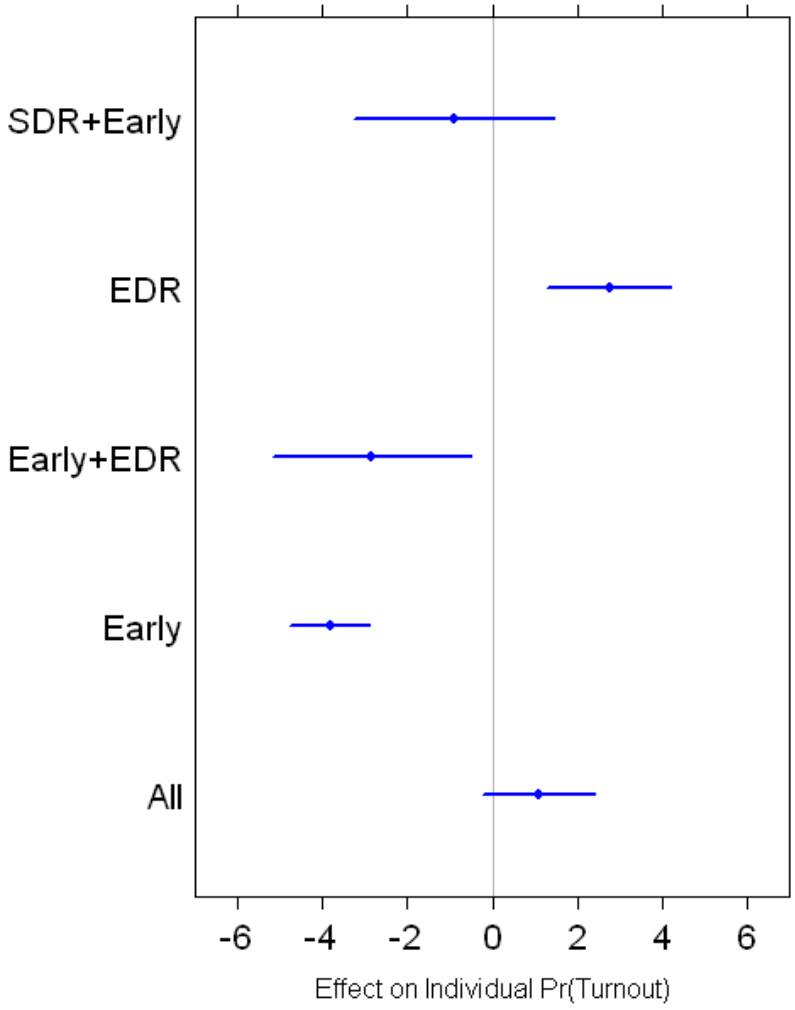
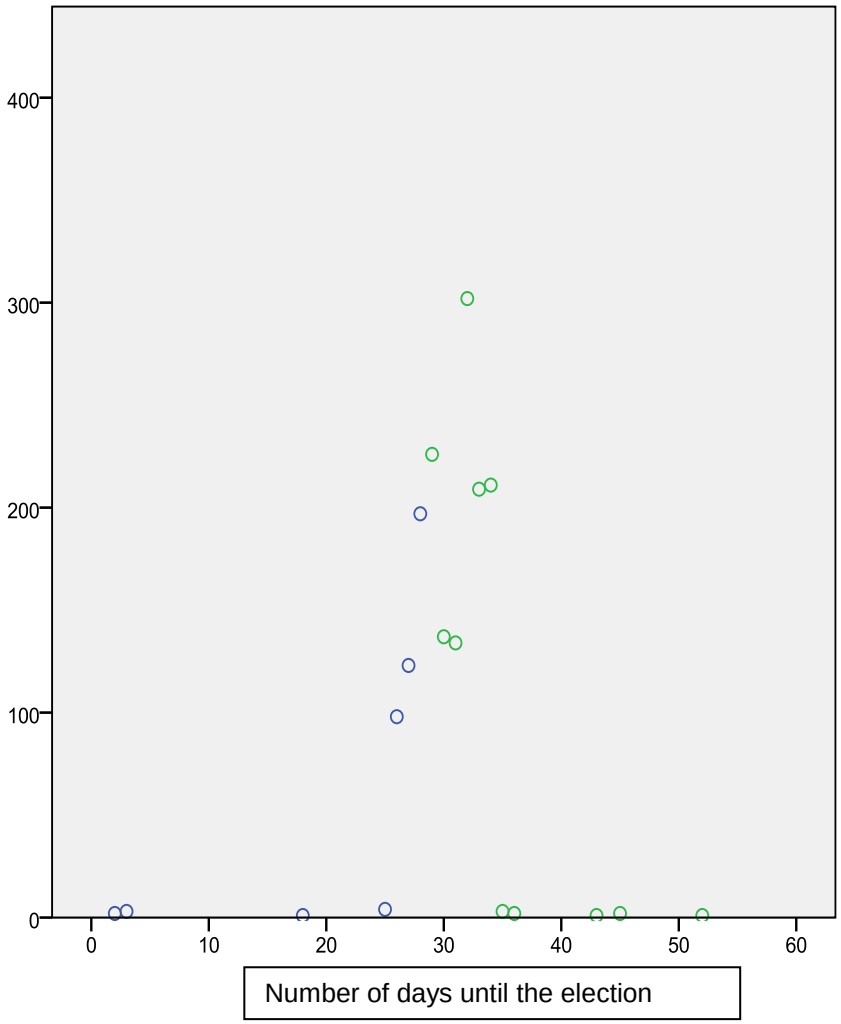


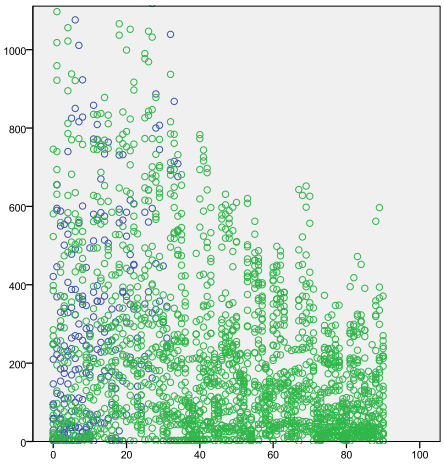
Figure 5: Daily McCain Campaign Advertising in California



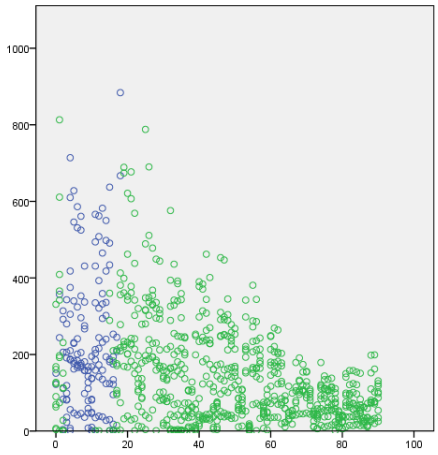
Note: Blue dots indicate days in which early voting was in effect.

Figure 6: Daily Campaign Advertizing by Battleground Status and Early Voting

Battleground States
Early Voting < 50%



Battleground States
Early Voting > 50%



Non-Battleground States
Early Voting < 50%

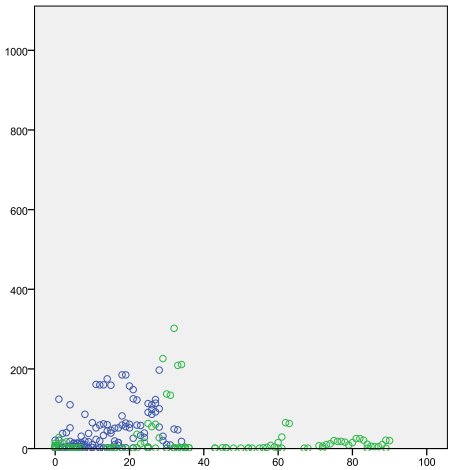


Table 1: Regression Estimates of Election Laws on County Turnout

	I	II
EDR	6.72**	7.86*
	(2.24)	(4.30)
EDR + Early Voting	4.96***	5.40***
	(1.45)	(1.44)
EDR + SDR + Early Voting	4.25*	11.01***
	(2.06)	(2.02)
Early Voting + SDR	.45	-.89
	(1.79)	(2.25)
Early Voting	-3.46*	-5.76***
	(1.52)	(1.61)
Closing Date	-.10	.09
	(.10)	(.13)
ID Requirement	.80	-.06
	(1.32)	(1.64)
Ex-Felons Barred	.10	1.26
	(1.46)	(1.68)
Percent Black	.12***	.113**
	(.035)	(.040)
Median Income	.0003***	.0002**
	(.00005)	(.0007)
Percent College Graduates	.32***	.30***
	(.07)	(.07)
Percent 65 or Older	.86***	.671***
	(.09)	(.18)
Population (in 100,000s)	-.39***	-.14**
	(.08)	(.05)
Population Density	-.0004**	-.0003***
	(.0001)	(.0004)
Campaign Competitiveness	-.08	-.244***
	(.07)	(.07)
Oregon	6.54***	10.44***
	(1.13)	(1.70)
Washington	3.62*	11.68
	(1.92)	(2.31)***
Constant	31.98***	35.77***
	(4.04)	(4.50)
R^2	.419	.585
Weighted by Population	No	Yes

Notes: $N = 3109$. ***$p < .001$ **$p < .01$,*$p < .05$, one-tailed test.
Cell entries are OLS regression estimates with standard errors in parentheses.
Robust standard errors clustered at the state level.

Table 2: Effect of SDR Window Length on County Turnout

Length of Window (in days)	.29***
	(.03)
Closing Date	.03
	(04)
ID Requirement	.77
	(.88)
Percent Black	.05*
	(.03)
Median Income	.0002*
	(.0001)
Percent with BA	.32***
	(.05)
Percent 65 or Older	.67***
	(.07)
Population (in 100,000s)	-.14**
	(.05)
Population Density	-.0003
	(.0002)
Campaign Competitiveness	-.06**
	(.04)
Constant	34.05***
	(2.88)
R^2	.464

Notes: $N = 713$. ***$p < .001$ **$p < .01$,*$p < .05$, one-tailed test.
Cell entries are OLS regression estimates with standard errors in parentheses.
Analysis is limited to states with SDR.
Robust standard errors clustered at the state level.
Fixed effects for individual states not reported.
Ex-felon disenfranchisement variable omitted because it does not vary in SDR states.

Table 3: 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
Pct. Correct Predicted	73.4
N	74,327

***$p < .001$ **$p < .01$,*$p < .05$, one-tailed test.
Clustered standard error estimates (by state) reported in parentheses

Table 4: Multinominal Logit of Election Laws on Individual Turnout

	Did Not Vote	Voted Early in Person	Voted Early by Mail
EDR	-.14***	-.11	-.51***
	(.04)	(.13)	(.07)
EDR + Early Voting	.39***	2.20***	.86***
	(.06)	(.09)	(.09)
EDR+ SDR + Early Voting	.18***	2.08***	.80***
	(.04)	(.07)	(.05)
Early Voting + SDR	.37***	2.02***	1.40***
	(.03)	(.06)	(.04)
Early Voting	.58***	2.13***	1.52***
	(.02)	(.05)	(.04)
Education	-.55***	.19***	.18***
	(.01)	(.02)	(.01)
African-American	-.68***	.54***	.18***
	(.03)	(.05)	(.02)
Hispanic	.05	.02	-.14**
	(.03)	(.06)	(.06)
Self-Reported Vote	-.84***	.04	-.09***
	(.02)	(.03)	(.03)
Naturalized Citizen	1.02***	-.07	-.10
	(.11)	(.22)	(.21)
Naturalized 10+ years	-.46***	-.16	.14
	(.12)	(.23)	(.22)
30-day Registration close	.11***	.27***	-.27***
	(.02)	(.03)	(.04)
Married	-.46***	-.05	-.18***
	(.02)	(.03)	(.03)
Residence 1 Year	-.33***	-.26***	-.26***
	(.03)	(.05)	(.04)
Income	-.08***	.03***	.01**
	(.003)	(.004)	(.004)
Gender	-.12***	.09***	.12***
	(.02)	(.03)	(.03)
Age	-.02***	. 02***	.03***
	(.001)	(.001)	(.001)
Age 18-24	-.28***	.28***	.80***
	(.03)	(.07)	(.06)
Age over 75	.20***	-.11*	.30***
	(.05)	(.07)	(.05)
South	.21***	1.35***	-.81***
	(.03)	(.04)	(.04)
Campaign Competitiveness	.001*	-.02***	-.02***
	(.001)	(.002)	(.002)
Constant	3.51***	-5.37***	-4.00***
	(.07)	(.13)	(.12)

Notes: Reference category is voting on election day; Pseudo-R^2 =.145; N=74174
***p < .001 **p < .01,*p < .05, one-tailed test.
Cell entries are OLS regression estimates with standard errors in parentheses

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