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

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State governments have experimented with a variety of election laws to make voting more convenient and increase turnout. The impacts of these reforms vary in surprising ways, providing 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 2004 and 2008 presidential elections. The results show that Election Day registration has a consistently positive effect on turnout, whereas the most popular reform—early voting—is actually associated with lower turnout when it is implemented by itself. We propose that early voting has created negative unanticipated consequences by 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. It seems logical that making voting more convenient—through relaxed registration rules, registration on Election Day, 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 when implemented by itself, 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. Our explanation involves rethinking the calculus of voting to focus on the *net* consequences of election laws, that is, the sum of both direct and indirect effects. Direct effects stem from the costs imposed by the state and include registration requirements, polling locations and hours, and rules such as identification requirements. Yet an exclusive focus on direct effects leads to a misunderstanding of how election laws indirectly affect mobilization by nongovernmental 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. The added convenience of early voting decreases the direct costs of voting, but this effect is more than offset by

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a reduction in mobilization efforts, resulting in lower net turnout.

Our study begins by analyzing prior research on state election laws, turnout, and mobilization. We then offer a theory of voter turnout that illuminates how combinations of Election Day registration (EDR), same-day registration (SDR), and early voting shape voting costs directly and indirectly through nongovernmental actors. Empirically, we address possible interactions by classifying all of the potential permutations and estimating separate effects for each. Our key models analyze cross-sectional individual and aggregate data from the 2004 and 2008 presidential elections. The results demonstrate that, on their own, EDR increases turnout, and early voting decreases it. Combining the two offsets the negative effect of early voting. We conclude by discussing the broader implications of the findings for future research on election reform and mobilization.

Previous Research

Reforming the voting process to increase turnout has been a long-standing goal in both the academic and policymaking communities.[1] Until recently, these efforts focused on reducing the costs of voting by making registration easier and voting more convenient. The most commonly proposed reforms have been EDR, SDR, and especially early voting.[2] Here we provide working definitions for each term and set out what is known from existing research.

Election Day registration permits eligible voters to both register and vote on Election Day. This should increase turnout by eliminating the need for two separate actions: registering in advance and then casting a ballot at a later date. 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.[3] It thus circumvents the registration closing date that would otherwise disenfranchise recent movers and others who fail to register in advance (Hershey 2009; Highton 2004; Squire, Wolfinger, and Glass 1987; Timpone 1998).

A consistent line of research has confirmed that EDR increases turnout. Estimates of the overall turnout effects of EDR range from three to seven percentage points in presidential elections (Brians and Grofman 2001; Fenster 1994; Hanmer 2009; Knack 2001; Neiheisel and Burden 2012; Rigby and Springer 2011). Highton summarizes the impact of EDR on voter turnout as "about five percentage points" (2004, 509).

Early voting, as we define it, constitutes practices that permit voters to cast ballots without excuse prior to Election Day. Early voting has more than quadrupled since the early 1990s, increasing from 7% of all votes in 1992 to over 30% in 2012. 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 observers of election practices to conclude that the "United States is in the midst of a revolution in voting" (Fortier 2006, 1).

Although early voting policies take different forms, they all eliminate the need for the voter to appear at a polling place on Election Day. These practices include no-excuse absentee voting, 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. In some states, voters must provide a justification before receiving absentee ballots, with wide variation in the stringency of the justifications. We code states with "no excuse" absentee voting or permanent absentee voting (which allows voters to request absentee ballots for all elections, and the ballot is automatically sent) as early voting states.

Research on the turnout effects of early voting has produced mixed results. Gronke, Galanes-Rosenbaum, and Miller (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 exclusive voting by mail, none of the early or absentee voting laws they studied boosted turnout in either presidential or midterm elections.[4] Other studies also

[1] Lijphart (1997) also suggested proportional representation, and even compulsory voting, as mechanisms for raising turnout.

[2] Voter identification laws are also making their ways across the states, although their goal is generally not increasing voter participation. The analysis below provides more insights on how voter ID might affect turnout.

[3] 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.

[4] Previous research also shows a positive effect of vote-by-mail (Karp and Banducci 2001; Magleby 1987; Southwell and Burchett

found little relationship between early voting and turnout (Fitzgerald 2005; Gronke et al. 2008; Oliver 1996; Primo, Jacobsmeier, and Milyo 2007; cf. Wolfinger, Highton, and Mullin 2005).[5]

Finally, we consider **same-day registration**, which we define as a practice that permits people to both register and vote in a single act prior to Election Day. SDR is essentially the marriage of EDR and early voting. It thus 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.

Election Laws as Turnout Mechanisms

We theorize that the costs of voting come in two types. They can be imposed *directly* through the legal framework of the voting process itself, which is controlled by the state. But an exclusive focus on these direct effects misses 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 relatively easy to envision how changes in election laws will shape direct legal burdens on voters, but it is harder to predict how changes may indirectly affect how nonstate actors alter their own mobilization efforts. The total net cost of voting includes both legal hurdles and the degree of underwriting provided by extragovernmental actors.

Theory suggests that election laws should have the largest impact on voters who are on the turnout bubble, that is, neither highly likely to vote nor to 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 regardless. 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 bring in new voters and therefore increase turnout from those reforms that simply provide alternative opportunities for voters who would cast a ballot under almost any set of rules.

To use Berinsky's (2005) classification, reforms can either *stimulate* new voters or *retain* existing voters. Stimulation is usually thought to happen via the strategic mobilization efforts of campaigns that engage in a media blitz as Election Day approaches. But our theoretical view conceives of mobilization as more than the efforts of campaign or party elites whose primary interest is in winning elections. Stimulation also arises nonstrategically from many informal sources: the local media that cover elections; intentional or unintentional recruitment by family, acquaintances, and coworkers who are discussing the election; and the sheer 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), inadvertent reductions in information costs, and social incentives for voting.

Some scholars have speculated that a loss of the "civic day of election" could lower turnout (Fortier 2006; Thompson 2004). Traditional Election Day is a social event as well 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 Election Day activities all help spur turnout by providing information about candidates and the process of voting, introducing some normative pressure to vote, and enhancing the social benefits of taking part in a collective enterprise. When these activities are diluted, or at least redistributed over time, so is the stimulating effect, particularly for the peripheral voter.

Early voting provides convenience to regular voters, particularly those already registered, and thus is better at retention than stimulation. It turns a large-scale social activity that once took place on a single election day into a weeks-long process that diffuses public visibility. EDR overcomes the screening effects of the closing date of registration and stimulates new voters by concentrating energy on a single election day. Crucially, it does so without robbing Election Day of its stimulating effects, and it 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

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 3-point drop in turnout. We do not study vote-by-mail directly but account for it by including dummy variables for Oregon and Washington.

[5] 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).

voters to the polls (Arceneaux, Kousser, and Mullin 2012; Fortier 2006; Funk 2010; Kropf, Swindell, and Wemlinger 2009; Thompson 2004). Field experiments demonstrate that turnout is increased by the presence of community festivals (Addonizio, Green, and Glaser 2007) and when voting habits may be publicized to neighbors (Gerber, Green, and Larimer 2008; Panagopoulos 2010). Arceneaux, Kousser, and Mullin (2012) find that traditional get-out-the-vote (GOTV) efforts have a larger turnout effect for those who vote at their polling place on Election Day rather than through the less socially visible process of voting by mail. Rolfe's (2012) emphasis on the social rather than individual roots of voter turnout helps us understand these experimental effects. For Rolfe, voting is primarily a social act in which a person's decision to vote is conditional on the turnout of others. People embedded in broader social networks with more mobilizing agents are thus more likely to be prodded to vote (see also Bond et al. 2012). Coupled with our argument about the free information that Election Day provides, all of this recent research is compatible with our theory about the importance of concentrating activity on a single election day.

By offering more days on which to vote, early voting lowers the direct costs of voting, but mostly as a convenience for those who were already planning to vote. Registration statistics confirm this effect: 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 almost certainly brings out some new voters who would have difficulty making it 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 reducing mobilization (the indirect effect).

Precisely how does this occur? Political campaigns strategically consider the political environment as they choose to invest resources to mobilize voters. Partisan contacts, direct mail, phone calls, leafleting, and mass media (Green and Gerber 2008), levels of competition and campaign spending (Jackson 1997, 2002), campaign advertising (Freedman, Franz, and Goldstein 2004),[7] campaign yard signs (Panagopoulos 2009), texts (Strauss and Dale 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 will be negative. To the degree that using mass media to contact potential voters is inefficient (Krasno and Green 2008), it becomes even more so when many likely voters have already cast their ballots. Evidence from television advertising data shows that campaign stimulation responds precisely in the ways our argument suggests (see Figure A1 in the supplemental information). The volume of ads is lower in states with early voting, and the ramp-up of ads before Election Day is also less steep in these states.

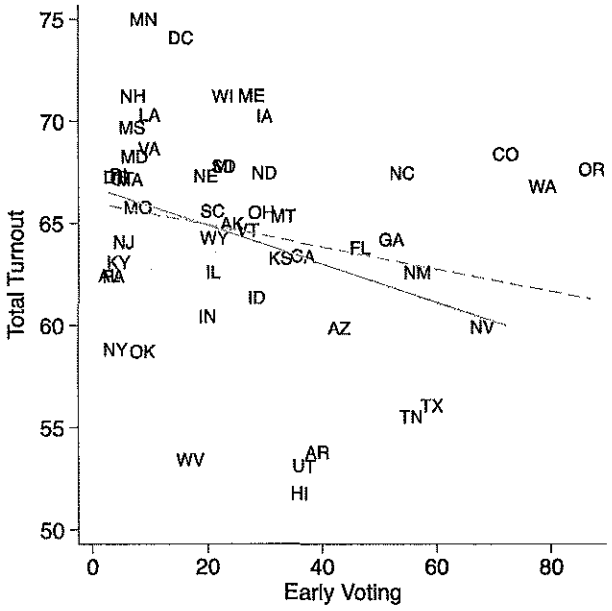
Rather than building up to a frenzied Election Day in which media coverage and interpersonal conversations revolve around politics, early voting makes voting a more private and less intense process. Social pressure is less evident, guidance on how and where to vote is less handy, and the prospect of positive social interactions at the polls is decreased. These reductions in stimulation—both strategic and nonstrategic mobilization—are greater than the modest positive benefits of additional convenience that accrue largely to those who would vote in any case. Early voting thus stands in stark contrast to EDR, which eliminates the need to register before the campaign reaches maximum intensity and keeps the focus of social and political activity on a single day. Election Day is abuzz with discussion, media coverage, and last-minute contacts from parties and candidates, factors that can exert a mobilizing impact on a wider group of potential voters in EDR states.

Combinations of laws necessarily blend direct and indirect forces. We hypothesize that the depressive effects of early voting may be overcome if it is paired with EDR, SDR, or both. Although it adds convenience, a primary limitation of early voting by itself is that it fails to circumvent registration closing dates, which screen out voters who do not register in advance. SDR and especially EDR eliminate this problem by offering one-stop shopping and allowing individuals who become interested late in the campaign to be mobilized into voting. The positive turnout effects of EDR have already been demonstrated in the literature. Our main theoretical contention is that early voting alone decreases turnout, but that EDR and SDR have the potential to offset that effect.

[6]The Election Assistance Commission (EAC) collected data on SDR 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" (2009a, 2009b).

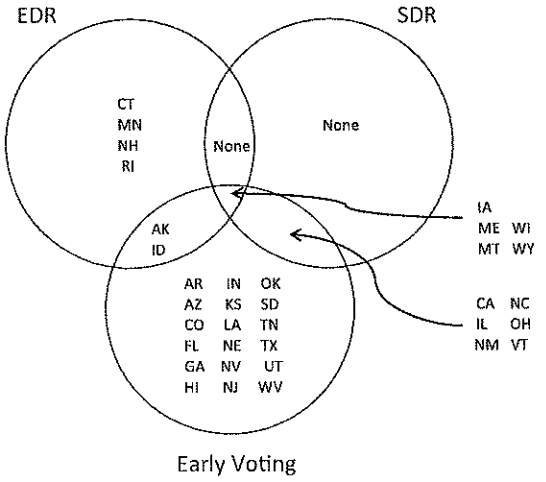
[7]But see Huber and Arceneaux (2007) and Krasno and Green (2008) for evidence that campaign ads have little influence on turnout.

FIGURE 1 Early Voting and Turnout in the States in 2008



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



The idea that making voting easier will reduce turnout is certainly counterintuitive. To establish the plausibility of the argument, we begin with Figure 1, which plots overall state-level voter turnout in the 2008 presidential election against the percentage of votes cast early, using data from the Current Population Survey. The negative relationship is clear: higher early voting rates are associated with lower overall turnout. The dotted line is the bivariate regression line; the solid line is the regression with Washington and Oregon omitted (as they have unique mail-in-balloting rules). In both cases, the slope is negative and statistically significant.

This bivariate analysis is only a starting point, as it neither captures the complexity of the relationships nor accounts for the control variables that must ultimately be included. But the clarity of the relationship certainly hints that early voting does not increase voter participation. In the next section, we provide more precise specifications of election laws and empirical techniques for estimating the net effects of these laws on voter turnout.

Data and Methods

The first step in analyzing the effect of election laws on turnout is classifying states according to their laws. We have theorized that each specific election practice will have an independent effect, but that different combinations will have distinct effects. Many states adopt multiple reforms, so each distinct combination must be evaluated. The range of terminologies and practices across the states produces the equivalent of 50 different election administration systems; we reduce this variety down to the variation in three key laws. Using the definitions we set out above, we coded each state's laws in both the 2004 and 2008 presidential elections.

Figure 2 is a Venn diagram displaying the different voting rules and combinations in place in 2008. There are 35 states employing one of the five possible permutations of early voting, EDR, and SDR; the 15 states that have none of the three practices—which have no forms of convenience voting—are not shown.[8] The most common approach, used by 18 states, allows early voting but still requires preregistration. We classify 11 states as having EDR and another overlapping 11 having SDR. The supporting information provides more information on our coding of states.

There are seven theoretically 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, or (7) all three. Because SDR requires early voting, there are no states with just SDR or a two-way combination of SDR and EDR. As a result, there are only five actual combinations, each of

[8]Also omitted are Oregon and Washington, both of which essentially mandate voting by mail, and North Dakota, which officially has no voter registration.

which we will compare to a baseline of 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 2004 and 2008 presidential elections: county-level election returns and individual data from the Current Population Survey (CPS) November 2004 and 2008 Voting and Registration Supplements. The CPS, a common dataset in voting analysis, is a large-scale sample survey normally used to analyze labor-force data. In November of election years, most questions in the voting battery have between 60,000 and 90,000 valid observations based on interviews with U.S. citizens of voting age. All of our datasets 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. Analyzing two election years guarantees that the findings are not due to a specific candidate or campaign.

Before we turn to the actual estimates, we consider the potential for endogeneity in our cross-sectional individual- and county-level analyses. Hanmer (2009) and others have challenged 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 is that we cannot directly observe the quantity in which we are most interested: how an individual's behavior changes if the voting rules faced change 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 nonearly voting states. If election laws are endogenous—if, for example, a state adopted early voting or EDR because turnout was low and legislators wanted to enact laws that would increase turnout, the laws would not be exogenous and our inferences would be biased.

We believe these concerns must be taken seriously, but we do not see them as undermining our conclusions about early voting. First, the universe of states that have adopted different mixes of election reforms is now large and diverse, making it more difficult to make causal arguments about why states adopted any particular package of reforms. 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.[10] Some states adopted early voting by legislation, others by administrative decision, and yet others by ballot initiative.

Second, we 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 happen to have higher turnout and more convenient election laws, controlling for all of these covariates in a multivariate analysis will leave only the residual effects of the laws themselves to be picked up by our election-system variables. Our rich datasets permit inclusion of a wide array of controls, and we also adjust the standard errors to account for clustering of observation by state (Erikson and Minnite 2009; Primo, Jacobsmeier, and Milyo 2007). This conservative approach allows that observations within a state—whether we are speaking of individuals or counties—are not independent of one another. Moreover, we estimate relationships at both the individual and aggregate levels. This approach combines the strengths of each approach, making us more confident when the findings are consistent across models.

Finally, to address the issue empirically, we conduct several additional analyses conducted to verify the robustness of our key results. These extensions, which include statistical matching, dose response, and difference-in-difference models, should be less subject to potential endogeneity concerns, and all point to similar conclusions about the negative impact of early voting.

Individual-Level Regression Analysis

Our individual-level analysis of the likelihood of voting draws on the Voting and Registration Supplement Files of the CPS for both 2004 and 2008. We use a larger number of independent variables than most other models

[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 an additional test.

[10]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 (or low) levels of turnout.

of turnout.[11] Alvarez, Bailey, and Katz describe the "canonical model of voter turnout using CPS data" (2011, 28) as using age, residence in a southern state, education, income, squared values of age and education, and nonwhite as independent variables (see also Wolfinger and Rosenstone 1980). In addition, 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, the year of entry into the United States (if naturalized), and whether a respondent's voting status is self-reported or reported by proxy.[12] We err in the conservative direction by including this additional information. We include variables describing the five possible combinations of early voting, SDR, and EDR, as well as separate dummy variables for other election laws, indicators for North Dakota, Oregon, and Washington, and a measure of campaign competitiveness. Campaign competitiveness is the difference between the final preelection poll standings of the two major party nominees, a summary measure taken from Pollster.com. To ease the interpretation of the competitiveness variable, we compute this variable as 100 − |Democratic% − Republican%|, so that higher values indicate a more competitive campaign environment.

The logit results, reported in Table 1, show that individuals are more likely to vote in states with only EDR and less likely to do so in states with only early voting. The results suggest that EDR and SDR can offset the negative effects of early voting when the practices are combined. To facilitate interpretation of the size of the effects, Figure 3 presents the effects translated into changes in the probability of voting, along with the 95% confidence intervals. As this dot plot shows, EDR raises the likelihood of voting by three to four percentage points (although the

[11]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. 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 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. Using this method, 64.9% of respondents in the CPS reported voting in 2008 ($N = 92{,}360$). This percentage is significantly higher than the actual 2008 VAP turnout, estimated at 56.8% (McDonald 2009), but the CPS is one of the most accurate among all election surveys. Although the overreporting phenomenon is well known, the large literature on the problem has generally concluded that the consequences for statistical inference are minor (Highton 2005).

[12]Because they are ineligible to vote, noncitizens are not included in this CPS sample.

TABLE 1 Logit Estimates of Election Laws on Individual Turnout

	2008	2004
Early Voting	−.180***	−.134**
	(.058)	(.062)
Early Voting + SDR	.008	−.048
	(.048)	(.089)
Early Voting + EDR	−.069	.057
	(.128)	(.116)
Early Voting + EDR + SDR	.134	.317***
	(.082)	(.081)
EDR	.191*	.157
	(.092)	(.166)
Other Election Laws		
30-Day Registration Close	−.124**	−.110*
	(.049)	(.063)
ID Requirement	.009	.021
	(.062)	(.077)
Demographics		
Education	.600***	.625***
	(.021)	(.022)
African American	.719***	.400***
	(.061)	(.066)
Hispanic	−.049	−.112***
	(.102)	(.039)
Self-Reported Vote	.823***	.643***
	(.029)	(.025)
Naturalized Citizen	−1.028***	−1.158***
	(.175)	(.144)
Naturalized 10+ Years	.456***	.500***
	(.165)	(.138)
Married	.426***	.490***
	(.024)	(.031)
Residence 1 Year	.269***	.370***
	(.035)	(.033)
Income	.083***	.082***
	(.003)	(.003)
Female	.149***	.109***
	(.018)	(.013)
Age	.025***	.029***
	(.001)	(.001)
Age 18–24	.425***	.465***
	(.038)	(.039)
Age over 75	−.108**	−.138***
	(.053)	(.050)
State Electoral Factors		
Campaign Competitiveness	.011***	.004
	(.003)	(.003)
South	−.075	−.066
	(.058)	(.084)

(Continued)

TABLE 1 (Continued)

	2008	2004
North Dakota	−.343***	−.066
	(.081)	(.094)
Oregon	.192***	.444***
	(.045)	(.057)
Washington	−.021	.021
	(.064)	(.055)
Constant	−4.774***	−4.311***
	(.261)	(.234)
Pseudo-R^2	.146	.150
Percent Correct Predicted	73.38	73.50
N	73,333	78,244

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

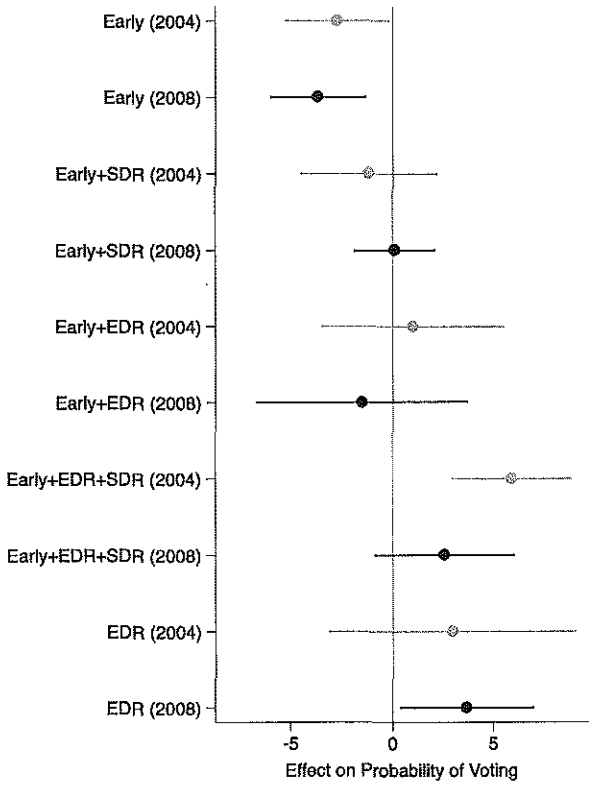
95% confidence interval includes the zero point in 2004). The clearest finding is early voting lowers the likelihood of turnout by three to four percentage points. Other combinations have little effect.[13]

The many control variables behave largely as expected. In line with a long literature, formal education has a large positive effect on turnout. Income, marriage, and long-term residence also show positive effects. Age generally has a positive effect, although with a boost for the youngest individuals and a tailing off in turnout among the oldest. The self-reported vote variable is positive, suggesting that overreporting is more common when the respondent is reporting about herself. Latinos are less likely to vote, but it might be surprising that African Americans are more likely to do so. This is not unusual, however, as several studies have shown that blacks vote at a higher rate than whites once demographic disparities are taken into account (Leighley and Nagler 1992; Tenn 2005). The racial gap is larger in 2008, presumably due to black voter enthusiasm for Barack Obama's candidacy.[14] Finally, campaign competitiveness has a positive effect on turnout, consistent with the notion that intense campaign environments stimulate more voter participation.

[13]In the 2008 model, the Early Voting coefficient is significantly different from the Early Voting + EDR coefficient and the Early Voting + EDR + SDR coefficient (both $p < .01$), but not the Early Voting + EDR coefficient ($p = .39$). In the 2004 model, the Early Voting coefficient is also significantly different from the Early Voting + EDR coefficient ($p = .08$) and the Early Voting + EDR + SDR coefficient ($p < .01$), although not the Early Voting + SDR coefficient ($p = .28$).

[14]Note that if more African Americans were voting early in 2008 because of their enthusiasm for Obama, this actually stacks the deck *against* our claim that early voting drives down turnout.

FIGURE 3 Effects of Election Laws on Individual Turnout



Note: Dots represent predicted probabilities and lines indicate 95% confidence intervals from estimates in Table 1.

The results support the logic that early voting, by undermining the mobilizing effects of Election Day, reduces turnout. This negative effect might be offset by the convenience of early voting, but we hypothesize that early voting facilitates participation by those individuals *already likely to vote.* All else equal, we therefore do not expect the convenience of early voting to increase 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. To test this idea, we leverage questions in the CPS that ask respondents whether they voted, and if so whether it was on Election Day, early by mail, or early in person. 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. 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 to analyze this dependent variable, 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 2. 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.

The results show that states with some form of early voting in place have higher proportions of those who do not vote. The primary coefficients we are interested in for this model are those that we know indicate a higher likelihood of voting, based on existing research, such as age, education, and income. As Table 2 shows, the coefficients for these variables are all negative in the "did not vote" column but positive in two "voted early" columns, telling us that early voters score higher on these dimensions. The CPS results therefore suggest that 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. Most notable is this: in states with early voting, even combined with other election laws, people are simply less likely to vote. This result holds for both 2004 and 2008.

Next, we replicated our models using data preprocessed with a matching method. This approach allows us to consider the various voting administrative practices as analogous to a "treatment" effect applied to individuals. We separate our observations into two categories, those in states with early voting—our treatment—and those in states with no convenience voting at all—our control. This is necessary to ensure that our results are not affected by other voting laws. Ideally this severs the connection between the demographic characteristics and early voting, essentially creating a random experiment. Comparing the average treatment effect gives us a good estimate of the effect of, in this case, early voting. Details of the matching process, including balance statistics, may be found in the supplemental information.

We show the logistic regression results in Table 3 and stress that we are comparing early voting states to those states with no forms of convenience voting. These results confirm our basic result that early voting depresses turnout, with an effect of −3.3 percentage points in 2004 and −7.2 percentage points in 2008.[15]

The rest of the variables behave as expected. For example, in both years turnout is more likely among the educated, older people, those who are married, African Americans, and those with higher incomes. The one exception is the competitiveness variable, which shows a negative effect on turnout. However, the estimated effects are tiny and reach significance because of the large sample size. More importantly, the analysis demonstrates that the negative effects of early voting on individuals are not specification dependent.

[15]The dummy variable for North Dakota drops out because there were no observations from that state in the matched sample.

County-Level Regression Analysis

To further replicate our analysis, we analyze county-level aggregate turnout data. Here the dependent variable is turnout in the 2004 and 2008 presidential elections as a percentage of the voting-age population. The "voting-eligible population" would be a preferable measure, but it is not available at the county level. As in the first individual-level model, the key explanatory variables are dichotomous indicators for each of the five configurations of voting rules. As in the individual models, the control variables include other election laws, an array of demographics, and a measure of competitiveness. Demographic controls at the county level include the percent African American and Hispanic, median income, percentage of adults with bachelor's degrees, percentage 65 or older, total population, and population density. The results are weighted by county population to overcome the heteroskedasticity caused by the wide range in county populations.

The full ordinary least squares (OLS) results are presented in Table A3 in the supplemental information. On its own, the effect of early voting is negative in both models, but significant only in 2008. As other research has suggested, EDR by itself appears to increase turnout by several points. The depressive effects of early voting are helped minimally by SDR, but much more by EDR or the combination of both forms of one-stop shopping. This combination would seem to encourage both stimulation of new voters and retention of regular voters. Most of the other variables—ranging from demographics to campaign competitiveness—operate as expected. There is some variation between the results of the individual model in Table 1, which is to be expected because the models are estimating different quantities: the percentage turnout in a county versus the probability that an individual votes. Nonetheless, there is evidence in both datasets that EDR increases turnout and that early voting lowers turnout.

We enhance this basic analysis in two ways. First, we conduct a "dose-response" analysis. Stepping away from the dichotomous coding for the presence or absence of state laws, the logic of this approach is that our confidence in the causal effects will be greater if more of a particular variable (dose) produces a larger effect (response). If our theory is correct, these models will

TABLE 2 Multinomial Logit of Election Laws on Individual Turnout

	Did Not Vote		Voted Early in Person		Voted Early by Mail	
	2008	2004	2008	2004	2008	2004
Early Voting	.509***	.353***	2.251***	2.200***	1.150***	1.048***
	(.102)	(.083)	(.456)	(.597)	(.403)	(.271)
Early Voting + SDR	.382***	.269*	1.974***	1.701**	1.875***	1.670***
	(.097)	(.154)	(.507)	(.760)	(.482)	(.509)
Early Voting + EDR	.391*	.115	2.081***	1.846***	1.523***	1.208***
	(.162)	(.136)	(.478)	(.587)	(.423)	(.302)
Early Voting + EDR+ SDR	.168	-.139	2.051***	1.676***	1.401***	1.274***
	(.102)	(.104)	(.472)	(.561)	(.338)	(.309)
EDR	−.141	−.139	−.250	−.009	−.231	−.081
	(.089)	(.104)	(.474)	(.665)	(.467)	(.350)
Other Election Laws						
30-Day Registration Close	.135	.168*	.441	.693	−.420	−.086
	(.083)	(.092)	(.285)	(.461)	(.342)	(.257)
ID Requirement	.081	.080	−.361	.032	.956**	.947***
	(.091)	(.084)	(.455)	(.639)	(.345)	(.219)
Demographics						
Education	−.552***	−.597***	.196***	.166***	.172***	.152***
	(.023)	(.023)	(.028)	(.025)	(.027)	(.024)
African American	−.662***	−.475***	.537***	−.428***	−.317***	−.622***
	(.069)	(.070)	(.142)	(.144)	(.114)	(.101)
Hispanic	.050	.135***	.054	.208	−.044	−.130
	(.129)	(.047)	(.163)	(.183)	(.165)	(.086)
Self-Reported Vote	−.839***	−.665***	.035	.036	−.085**	−.180***
	(.030)	(.025)	(.027)	(.034)	(.037)	(.031)
Naturalized Citizen	1.024***	1.296***	−.070	.052	.050	.864***
	(.185)	(.152)	(.318)	(.377)	(.164)	(.251)
Naturalized 10+ Years	−.454***	−.621***	−.145	−.059	.044	−.839***
	(.171)	(.137)	(.270)	(.395)	(.194)	(.255)
Married	−.462***	−.526***	−.044	−.033	−.182***	−.263***
	(.028)	(.029)	(.055)	(.063)	(.052)	(.052)
Residence 1 Year	−.331***	−.380***	−.265***	−.115*	−.217***	−.017
	(.038)	(.036)	(.051)	(.061)	(.053)	(.076)
Income	−.077***	−.080***	.030***	.013	.021**	.011
	(.004)	(.003)	(.009)	(.010)	(.008)	(.007)
Female	−.116***	−.101***	.096***	.023	.147***	.047*
	(.018)	(.013)	(.031)	(.031)	(.024)	(.026)
Age	−.019***	−.025***	.019***	.022**	.032**	.032***
	(.002)	(.001)	(.002)	(.002)	(.003)	(.002)
Age 18–24	−.270***	−.327***	.297***	.397***	.952***	1.132***
	(.043)	(.040)	(.102)	(.090)	(.144)	(.147)
Age over 75	.196***	.188***	−.117	−.376***	.324***	.284***
	(.061)	(.052)	(.076)	(.062)	(.094)	(.067)
State Electoral Factors						
Campaign Competitiveness	−.006	−.002	.040	.012	.005	.018*
	(.005)	(.004)	(.025)	(.018)	(.013)	(.011)

(Continued)

TABLE 2 (Continued)

	Did Not Vote		Voted Early in Person		Voted Early by Mail	
	2008	2004	2008	2004	2008	2004
South	.236**	.139	1.289***	1.326***	−.592	−.649
	(.115)	(.098)	(.343)	(.461)	(.380)	(.238)
North Dakota	.224*	−.005	.085	.177	−.932	−.689*
	(.119)	(.120)	(.358)	(.825)	(.391)	(.347)
Oregon	1.927***	2.091***	1.070**	1.824***	5.195***	5.858***
	(.081)	(.073)	(.458)	(.592)	(.302)	(.230)
Washington	1.497***	.918***	.809*	.292	3.528***	3.788***
	(.087)	(.074)	(.450)	(.579)	(.409)	(.229)
Constant	3.909***	3.884***	−8.997***	−7.423***	−5.683***	−6.927***
	(.433)	(.309)	(1.907)	(1.559)	(1.135)	(1.014)
Pseudo-R^2	.169	.167				
Percent Correct Predicted	58.24	63.23				
N	73,183	78,139				

Note: Reference category is voting on Election Day. Cell entries are multinomial logit coefficients with robust standard errors clustered by state in parentheses.
*p < .10, **p < .05, ***p < .01, two-tailed test.

show that longer early voting periods decrease turnout, whereas longer SDR windows will increase turnout. Table 4 presents another version of the 2008 county turnout model. Instead of including dummy variables for each set of election laws, two new variables measure the *number of days* that early voting and SDR were available. We estimate models with these variables entered separately and simultaneously. In all specifications, the results show that a longer window increases turnout in the case of SDR but decreases it in the case of early voting. The estimates suggest that an additional 10 days of early voting decreases voter turnout by about a percentage point while an additional 10 days of SDR increases turnout by about 2.5 points. These results hold whether the window length variables are entered separately or simultaneously into the model. Control variables continue to perform largely as expected.

Second, to address concerns about endogeneity most directly, we estimate difference-in-difference models on the county aggregate data. Such models are frequently employed for research of this type in which policy interventions thought to influence political behavior might be shaped in part by that behavior (Bowler, Brockington, and Donovan 2001; Erikson and Minnite 2009; Giammo and Brox 2010; Hanmer 2009; Leighley and Nagler 2009). Its key strength is its identification through a pre-post, within-subjects comparison of "treatment" and "control" groups. It alleviates concerns about endogeneity by modeling how changes in an outcome (turnout) are affected by changes in a treatment (early voting). In the short term, it is unlikely that such policy innovations are endogenous, and any inherent differences in turnout among states are factored out automatically by design, removing the concern that some unmeasured variables could be responsible for the observed relationship.[16]

We regress the change in turnout between 2008 and 2004 on the changes in early voting and EDR laws between those same two years. One limitation of this approach is that only three of the five combinations of laws were altered between 2004 and 2008. Fortunately, early voting was among them.[17] Note also that in the aggregate, this comparison actually works against our hypothesis. Both early voting and overall turnout increased between the two elections.

Table 5 displays three specifications of the difference-in-difference model. Column I displays the simplest version with no control variables. Column II adds a control for a key variable, the change in campaign

[16]An even more powerful approach would track jurisdictions over a longer period of time. Funk (2010) is able to do a longitudinal analysis in her study of postal voting in Switzerland. Some studies suggest that initial effects of election laws vary over time (Ansolabehere and Konisky 2006; Giammo and Brox 2010).

[17]Note that for all three combinations of laws, we are measuring the effects of adoption because no state repealed any of these practices between 2004 and 2008. A concern is that few states actually changed their election laws during this period, providing less than ideal statistical leverage. In particular, for the three-way combination of early voting, EDR, and SDR, only one state (New Jersey, with 21 counties) moved, lowering our confidence in that estimated effect. The early voting effect is based on new laws in three states (a total of 290 counties).

TABLE 3 Individual-Level Effects of Early Voting Using Matched Samples

	2008	2004
Early Voting	−.227***	−.159**
	(.058)	(.061)
Other Election Laws		
30-Day Registration Close	−.159**	−.135
	(.066)	(.088)
ID Requirement	−.005	.121
	(.067)	(.078)
Demographics		
Education	.588***	.634***
	(.025)	(.027)
African American	.727***	.369***
	(.070)	(.081)
Hispanic	−.113	−.115*
	(.105)	(.060)
Self-Reported Vote	.857***	.651***
	(.037)	(.032)
Naturalized Citizen	−1.180***	−1.244***
	(.128)	(.204)
Naturalized 10+ Years	.547**	.668***
	(.174)	(.186)
Married	.425***	.481***
	(.032)	(.036)
Residence 1 Year	.312***	.362***
	(.045)	(.044)
Income	.086***	.085***
	(.004)	(.004)
Female	.166***	.107***
	(.021)	(.018)
Age	.025***	.031
	(.001)	(.018)
Age 18–24	.384***	.484***
	(.041)	(.045)
Age over 75	−.099	−.165**
	(.067)	(.059)
State Electoral Factors		
Campaign Competitiveness	−.010**	−.0014***
	(.004)	(.003)
South	−.057	−.093
	(.071)	(.122)
Oregon	−.125**	.506***
	(.056)	(.058)
Washington	−.068	.071
	(.059)	(.057)
Constant	−4.685***	−3.99***
	(.322)	(.214)
Pseudo-R^2	.151	.152
Percent Correctly Predicted	73.48	72.85
N	50,481	47,553

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

TABLE 4 Regression Estimates of Early Voting and SDR Windows on County Turnout in 2008

	Early Voting	SDR	Both
Early Voting	−.077*		−.125***
Window (in days)	(.042)		(.027)
SDR Window		.230***	.280***
(in days)		(.054)	(.049)
Other Election Laws			
30-Day Registration	−1.798	−.760	−.714
Close	(1.2508)	(1.140)	(.949)
ID Requirement	−1.065	.781	1.198
	(1.396)	(1.242)	(1.074)
Demographics			
Percent African	.051	.076**	.076***
American	(.032)	(.030)	(.028)
Percent Hispanic	−.289***	−.292***	−.268***
	(.035)	(.044)	(.034)
Median Income	.125**	.141**	.152***
(in 1,000s)	(.048)	(.055)	(.052)
Percent College	.257***	.267***	.255***
Graduates	(.052)	(.048)	(.050)
Percent 65 or Older	.255**	.356***	.323***
	(.102)	(.087)	(.083)
Population	−.034	−.059	−.051
(in 100,000s)	(.030)	(.040)	(.036)
Population Density	−.0003***	−.0002***	−.0002***
	(.00004)	(.00003)	(.00003)
State Electoral Factors			
Campaign	.350***	.246***	.299***
Competitiveness	(.072)	(.068)	(.058)
South	−3.636***	−3.091**	−3.703***
	(1.151)	(1.215)	(1.024)
North Dakota	−2.828	−4.038**	−5.227***
	(1.920)	(1.661)	(1.493)
Oregon	2.527**	5.257***	5.898***
	(.980)	(.793)	(.840)
Washington	3.152**	4.205***	4.614***
	(1.569)	(1.537)	(1.304)
Constant	20.663***	23.257***	20.180***
	(5.869)	(4.907)	(4.531)*
R^2	.677	.701	.723
N	3,108	3,108	3,108

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

competitiveness. Column III is the richest specification that includes change in several election laws, an indicator for whether a simultaneous U.S. Senate race took place, and a number of demographic controls. These controls allow the change in turnout (i.e., slope of change) to

TABLE 5 County Difference-in-Difference Models

	I	II	III
ΔEarly Voting	−2.694***	−2.099***	−2.699***
	(.618)	(.620)	(.508)
ΔEarly Voting + SDR	.107	.363	−.281
	(.259)	(.287)	(.369)
ΔEarly Voting + EDR + SDR	−3.853***	−3.361***	−1.839***
	(.695)	(.651)	(.574)
Other Election Laws			
ΔID Requirement			.433
			(.340)
Demographics			
Percent African American			.139***
			(.009)
Percent Hispanic			.024***
			(.005)
Median Income (in 1,000s)			.071***
			(.011)
Percent College Graduates			.009
			(.012)
Percent 65 or Older			−.007
			(.023)
Population (in 100,000s)			.002
			(.012)
Population Density			−.00005***
			(.000016)
State Electoral Factors			
ΔCampaign Competitiveness		.046***	.031**
		(.014)	(.014)
ΔSenate Race			.042
			(.136)
Constant	2.142***	2.214**	−3.097***
	(.114)	(.125)	(.581)
R^2	.053	.069	.405
N	3,109	3,108	3,108

Note: Cell entries are linear regression coefficients with robust standard errors clustered by county in parentheses. Dependent variable and key independent variables are differenced. The same states held gubernatorial elections in 2004 and 2008, so this variable is not differenced. Wisconsin was the only state to change its closing date.
*p < .10, **p < .05, ***p < .01, two-tailed test.

vary depending on the population characteristics of the county. All three models use linear regression with standard errors clustered by county because each county is observed at two points in time.[18]

All three models show that in states that added early voting between 2004 and 2008, county turnout fell by two to three points. It is surprising that the combination of all three laws appears to decrease turnout in the first two models, but the magnitude of the effect declines with the fullest specification in the final column and, as noted, is based on only one state. In the fullest specification, early voting decreases county turnout by 2.7 percentage points. This estimate is remarkably similar to the cross-sectional results above, and we are therefore more confident about the causal nature of the effect.

Conclusion

While we have offered evidence on differential effects of election laws on turnout and have proposed a theoretical 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 one of the most popular election reforms among state governments may inadvertently result 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 policy makers 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 partisan vote share and some demographic groups are affected more than others by these laws.

There is also need for more comprehensive evidence to illuminate 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.[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

[18]This is the approach used in Milyo's (2007) study of voter ID's impact on turnout. While in the cross-sectional models above clustering was applied by state, in the difference-in-difference framework, state factors are held constant, so we apply clustering by county to account for correlated errors over time. If state clustering is used instead, the estimated effect of early voting is unaffected, but the standard errors do increase beyond the standard .05 level of significance.

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

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. Finally, while early voting has a negative effect on turnout in two quite different presidential elections, it is possible that its effect could be different in elections with lower turnout, such as midterms and off-cycle local elections. Future research should sort out this potential impact of early voting. There may be opportunities for field experiments to provide additional leverage on these questions.

We have shown that election reforms cannot be studied in isolation. Instead, researchers must consider the different combinations of voting reforms as they actually appear in the states. This is the only way to capture the full effects of these complex and overlapping 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 a popular election reform, early voting depresses net voter turnout. 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 anything that makes voting easier will raise turnout.

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Supporting Information

Additional Supporting Information may be found in the online version of this article at the publisher's website:

Figure A1: Television Campaign Advertising by Level of Early Voting

Table A2: Individual Level Variable and Overall Balance Measures Before and After Matching

Table A3: Regression Estimates of Election Laws on County Turnout