When registration barriers fall, who votes? An empirical test of a rational choice model[*]

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Abstract. It is well known that those with higher SES characteristics tend to vote at higher rates in U.S. elections. Over the past several decades many proponents of eased voter registration requirements have predicted that liberalizing voter registration laws will significantly improve turnout, especially among the least well-educated and the poor. In this article we offer a rational choice model of turnout that leads us to expect the greatest turnout gains from virtually eliminating voter registration costs will instead accrue to those with medium income and education. We test this prediction longitudinally over the period 1972–1992 using a vast survey and a natural experiment comparing voters in states that adopted election day registration (EDR) with those residing in states maintaining more traditional closing dates. Contrary to much of the literature, citizens with medium education and medium income voted more under EDR, as the model predicts. We conclude that the methods used here better capture and empirically identify the curvilinear relationship between voter registration laws and the turnout probabilities at various SES levels.

1. Introduction

In contrast to other industrialized democracies, American citizens' principal procedural barrier to voting is each individual's responsibility to register

(Powell, 1986). It thus seems logical that, *ceteris paribus*, reducing the burden of registration will increase citizens' likelihood of voting.[1] Indeed, it is well established that a substantial reduction in registration barriers such as a state's adoption of election day registration (EDR) increases turnout, although the exact magnitude of the effect remains in some dispute, as does the impact on turnout of less dramatic changes in registration procedures (see Brians and Grofman, 1995; cf. Wolfinger and Rosenstone, 1980; Teixeira, 1992; Rosenstone and Hansen, 1993; Fenster, 1994; Mitchell and Wlezien, 1995).[2]

It also seems reasonable that reducing the costs of voter registration will have the greatest effect on those groups most impeded by registration barriers, producing disproportionately higher gains in turnout among these groups. The claim that easing restrictions on voter registration will make the voting electorate more demographically representative of the general population has been advanced quite forcibly by Piven and Cloward (1988, 1989). This claim is also the basis for the insistence of liberal interest groups and civil rights activists that the federal government should intervene in state registration procedures to make registration easier, as by adopting so-called "motor-voter" and "agency" registration.

Yet, when empirically examined, researchers find little evidence substantiating the claim that lowered registration barriers disproportionately benefit the turnout proportions of any particular income or education group. Although finding that registration restrictions depress turnout, Wolfinger and Rosenstone (1980: 88) conclude that more liberal registration laws would have little altered the 1972 voting electorate's "demographic, partisan, or ideological characteristics". Similarly, Teixeira (1992: 138–141) concludes that even if maximum registration reform impact occurred (all states, all reforms, with cumulative effects) the voting electorate's demographics would be slightly affected. Likewise, an analysis using variables from the National Election Study asserts that the hypothesized expanded voting electorate created by easing registration laws would marginally differ from the present electorate in partisanship, political interest, or intensity of party attachment (Mitchell and Wlezien, 1995). The general finding that liberalized voter registration laws little effect the class composition of the voting electorate is attributed to the fact that the poor and less educated vote at considerably lower rates to begin with. If "every group benefits from liberalized registration laws" (Mitchell and Wlezien, 1995: 192), then – even if those at the bottom of the SES ladder obtain greater turnout gains – the relative composition of the voting electorate may change very little. Similarly, an ecological regression on 1990 county-level Minnesota data leads Calvert and Gilchrist (1993) to conclude that easier voter registration (i.e., EDR) does nothing to alleviate

class bias among the voting electorate, and may even advantage high-SES citizens.[3]

Diverging from previous work, one published study does suggest that registration laws may produce SES-contingent turnout effects. While primarily interested in broader measures of political participation, Rosenstone and Hansen (1993) studied turnout and registration laws using a pool of National Election Study presidential and midterm election surveys from 1956 to 1988. They find that earlier closing dates depressed voter turnout by 5.6%, with this legal requirement having an even larger impact on the less educated and the poor. The authors argue that registration closing dates falling long before the election directly reduce turnout among the less advantaged. Rosenstone and Hansen say turnout is also indirectly attenuated when party activists find it more difficult to mobilize members of groups having higher participation costs.

While in several cases breaking new ground, these studies investigating the effects of various registration laws on turnout by SES universally suffer from a failure to consider the possibility of curvilinear effects in their statistical estimations. In this paper we provide a model suggesting that groups that have either very low or very high political participation are unlikely to exhibit dramatic changes in turnout when voter registration barriers are eased. We compare turnout at several SES levels between states that adopted Election Day Registration (EDR) and other states, using survey samples taken before and after EDRs implementation. We find support for our hypothesis that those benefiting most from eased registration costs are middle class voters.

2. Model and hypotheses

2.1. *Modeling the impact of registration law change on the representativeness of the electorate*

Participation at the polls is affected by a variety of factors, including the voter's level of information about the choices and their probable consequences, interest in politics, feelings of citizen duty, the visibility of the campaign, and the extent of procedural barriers to participation that impose costs on the voter – such as the need to register in advance of the election. We may imagine that voters differ in motivation to participate in the electoral process, as well as in the nature of the procedural and other barriers that they face. To provide some heuristic insight we consider a very simple (probabilistic) model in which registration barriers are only one of several factors affecting turnout.[4]

Let M be a composite variable summing up the various aspects of a voter's motivation that affect the likelihood of his or her participation in that election.

Let H be a composite variable summarizing the various barriers (hurdles) that the voter must overcome in order to vote. We may think of H as simply the sum of barriers to the surmounted (e.g., costs in registration, costs of turnout on election day, costs to gain knowledge sufficient to make appropriate ballot choices, etc.), or we may think of it as a more complex function such as one involving multiple hurdles where the critical factor is the magnitude of the highest hurdle.

In a deterministic model we would assume that voting occurs when M is greater than H. Here we wish to consider the behavior of groups stratified according to SES characteristics. Consider n subgroups ($i = 1, n$) where the ith subgroup is characterized by a score on M, with mean m_i and standard deviation s_i. We first wish to consider what proportion of each subgroup will succeed (i.e., vote) as a function of m_i, s_i, and H. Without real loss of generality we may assume that M and H each lie between zero and one. For convenience, we let $s_i = s$ for all i, j.[5]

To illustrate, consider the case where $n = 4$. We may think of the four groups as low income, lower middle income, upper middle income, and upper income citizens, or as low education, high school education, some college, and college graduates. Empirically, for SES attributes of voters, it is well substantiated that $m_1 < m_2 < m_3 < m_4$ (e.g., Wolfinger and Rosenstone, 1980; Conway, 1991).

Consider first what happens for some fixed value of H. The probability that members of the ith group exhibit a value at or above H is given by a function S:

$$S\left(\frac{H - m_i}{2}\right) \tag{1}$$

where $S(H) = 1 - (H)$ is the *success function*, i.e., the proportion of individuals who succeed when the threshold is H. Note that S is an always decreasing function, since , the cumulative frequency distribution, is an always increasing function. The function S is well known as the "survival function" in medical analysis and in other statistical applications (Johnson and Kotz, 1972).

Now consider what happens when the barriers to turnout are reduced from H_1 to H_2, where $H_1 > H_2$, i.e., consider what happens when barriers to turnout are lowered. For group i, the gain in turnout is given by:

$$S\left(\frac{H_2 - m_i}{s}\right) - S\left(\frac{H_1 - m_i}{s}\right) \tag{2}$$

How will this function vary with m_i, and H_1 and H_2? Intuitively, we would expect that, when m_i is large relative to H_1, the difference shown in Eq. (2)

will not be large. In this instance, since most members of group i are already voting, lowering the barriers to voting still further can have little impact on that group's turnout. On the other hand, when m_i is much smaller than H_1, it should also be the case that, unless H_1 is very large relative to H_2, lowering the barriers to participation won't matter that much. A group with low m_i is a group that remains unlikely to vote unless H is quite low. However, since registration is but one of the hurdles to overcome prior to voting, even if it were reduced to near zero, a high proportion of those with low motivation are still unlikely to participate in the electoral process.

In sum, we generally expect that in the states that largely eliminated their registration barriers by shifting to EDR there should be a curvilinear relationship between the relative turnout gain and one's political motivation, interest, and knowledge. In other words, groups that are "in the middle" with respect to SES variables – surrogates for variables such as political knowledge or interest in our model – should be those obtaining the greatest turnout gains when registration barriers are lowered by the adoption of election day registration.

2.2. *Central hypothesis*

Although various types of voter registration law changes took place during the period under investigation, this article specifically considers the effects of EDR – the registration provision yielding the largest reduction in U.S. voter registration costs and the one that previous research most often found significantly associated with increased voter turnout. As discussed above, the removal or reduction of barriers to registration is expected to have a curvilinear effect on changes in participation as a function of level of political interest and knowledge (or their proxies). We posit that most people with low levels of political interest will be unaffected by the increased ease of access, because even with lowered barriers to participation other electoral costs remain a significant barrier to turnout. Regardless of registration provisions, citizens must still learn about the election and decide if it is worthwhile to expend the effort to vote.

Even negating all registration costs, we know that not everyone will go the the polls. North Dakota, for example, a state not requiring voters to register, exhibits strikingly similar voter turnout to its close neighbor South Dakota, which has fairly typical U.S. voter registration laws. This very clearly, if anecdotally, illustrates the point that while voter registration is a barrier to some people's turnout, it is not the sole barrier. On the other hand, when barriers to registration are reduced, the turnout of people having high involvement (and SES) should be unaffected because they are already overwhelmingly registered and voting.

In line with our model's general expectation of a curvilinear relationship in the magnitude of turnout change in groups of differing levels of motivation to vote when registration barriers are lowered, our central hypothesis is that the greatest turnout benefit of EDR in the 1972 to 1992 period will be reaped by the *middle-income and middle-education* groups. It is useful to recall that, despite the statistical intuition and theoretical model we provide in support of this hypothesis, it counters commonly held previous beliefs and some empirical research. Our hypothesis' expectations are contradicted by the common-sense claims of Piven and Cloward (1988, 1989) that easing registration will have its greatest impact on the turnout of the groups whose turnout levels are lowest. Our expectations also oppose the oft-noted empirical findings that easing registration laws benefits all SES groups in roughly equal ways.[6]

3. Data and research design

3.1. *Research design*

For our study, a natural experiment (i.e., Cook and Campbell, 1979) is possible because EDR was instituted in several U.S. states almost simultaneously. The three U.S. states employing EDR in all general elections in 1992 (Maine, Minnesota, and Wisconsin) adopted this reform after the 1972 general election and before the 1976 presidential election. Put simply, this natural experiment on the impact of EDR rules compares turnout in 1972 with voting rates in 1992 between the states that adopted this reform and those that did not.[7] Notice that not every single hurdle one must surpass in order to cast a vote is directly incorporated into this initial examination. Empirically, we only explicitly measure certain characteristics of voters, registration costs, and how many reach the outcome after crossing all the hurdles: voting.

Put simply, this study compares within-state changes in turnout over time, controlling for citizenship, SES characteristics (i.e., education and income), and registration law changes. In the analysis typical SES categories were chosen, omitting the rare case of, say, a highly educated pauper or vice versa. Intuitively and empirically, ascending income and educational categories correspond to one another.

In addition to our simple before-and-after cross-tabulation design, we also control for many turnout covariates using a variation on the standard Least Squares Dummy Variables (LSDV) equation. This multivariate analysis incorporates the same longitudinal approach: modeling variance in space and across time. Here, we actually employ logistic regression due to turnout's dichotomy. The LSDV procedure performs well when compared with other longitudinal multivariate approaches with two limitations: it can consume tremendous

degrees of freedom, and it yields dummy variables of unknown substantive interpretation (Stimson, 1985: 922–923). In our study we plan to use two (1972 and 1992) massive surveys, obviating the first concern, and since the year and state dummies are intended solely as control variables the latter restriction poses little concern. Moreover, a dummy variables estimation – such as ours – is most appropriate in case where the time dimension does not dominate the model (Stimson, 1985: 945; Nagel and McNulty, 1996: 782). Although this technique's use is not wholly uncontroversial (e.g., Erikson, 1995a, 1995b; Radcliff, 1995), it is quite appropriate in this case and LSDV will nicely augment the bivariate analysis in our natural experiment.

Of course, whether employing cross-tabs or multivariate regression, appropriate statistical controls must still be imposed. Fortunately, this study's longitudinal nature reduces the need for external statistical controls because in many ways states serve as controls for themselves. It may be useful, though, to consider controlling for region, changes in other registration laws, and potentially non-stationary levels of political party competition. Regionally, the South in many ways stands apart from the rest of the U.S. in any political analysis covering the last two decades. Of particular interest here, the pattern in registration and turnout in southern states has radically differed from the rest of the country since 1965 as a result of the effects of the Voting Rights Act (e.g., Alt, 1994; Rosenstone and Hansen, 1993).

It may also be necessary to control for other non-EDR changes in registration procedures that occurred during the study period as well. Motor voter registration has received considerable attention lately and (absent controls) its turnout affects could be misattributed to EDR. However, as of 1992 only a handful of states permitted registration concurrent with obtaining a driver's license. More often, between 1972 and 1992 many states altered their voter registration closing dates. This pre-election deadline will be controlled in our multivariate model as will the early impact of motor voter.

Political competitiveness has long been theoretically associated with increased turnout (Downs, 1957). In light of some recently emerging empirical links (Hill and Leighley, 1993; Hanks and Grofman, 1997), changing levels of party competition could intervene in our model if coincident to changes in registration laws. The well-known Ranney Index, which operationalizes state legislature dominance, is probably of less value when considering turnout in national elections (King, 1989). Therefore, we employed a competitiveness measure derived from state-level Democratic party vote share in the 1972 and 1992 presidential elections. In the 34 non-EDR, non-Southern states' party competition increased during this period. This difference would lead us to expect that the non-EDR states should, *ceteris paribus*, show a larger turnout gain from 1972 to 1992. If, instead, it is the EDR states that post a relative

turnout gain, we can safely conclude that our figures somewhat understate the turnout effects of EDR.

3.2. *Data*

To precisely identify voter characteristics, individual-level data are required. This paper depends on the exceptionally large samples of residents from every state drawn by the Voter Supplement to the U.S. Census Bureau's Current Population Survey (CPS) for the years 1972 and 1992. It provides a massive sample (over 100,000 adults in each year), interviewing enough citizens from each state to facilitate the state-level analysis our research design requires.[8] In addition to querying voting behavior, this survey also collects quite detailed demographic data on respondents, including marital status, race, sex, and the SES variables income and education. Political involvement and interest data are not available in the CPS data set, but we use income and educational achievement as partial surrogates for political interest and involvement variables, as there is a strong association between income and education and the more explicitly political variables. The National Election Study (NES), which has more variables sampling political attitudes and behavior, is sometimes used to supplement the CPS (e.g., Wolfinger and Rosenstone, 1980; Mitchell and Wlezien, 1995). Because the NES did not even sample two of the three EDR states in 1972 or 1992, it can not be used for our state-level study on registration barriers to turnout.

The principal drawback of the CPS Voter Supplement is that it somewhat overreports voter turnout when compared to official election returns reported by Secretaries of State. However, since we are using survey data collected using the same standardized procedures at each point in time and are primarily interested in longitudinal comparisons, this measurement issue should not significantly distort the empirical results. Moreover, the level of turnout misreporting in the CPS studies is well below that of the National Election Study (NES) surveys (Wolfinger, 1993). Also, the CPS sample is more demographically representative of the American population than is the National Election Study (Wolfinger and Rosenstone, 1980: 117). Adequate precautions and due vigilance should be taken when using any survey data, but past experience and extensive testing of these CPS data suggest they are quite reliable and provide valid measures of the variables of most interest to us. Both political scientists and the Census Bureau have customarily used the CPS for state-by-state analysis or report state-level voting characteristics derived from it (e.g., Mitchell and Wlezien, 1995; Wolfinger and Rosenstone, 1980; Squire, Wolfinger and Glass, 1987; U.S. Department of Commerce, 1989; Nagler, 1991).

Voter registration law changes (closing date and EDR) from 1972 and 1992 were individually coded for each state. Following the U.S. Supreme Court's specifications in *Dunn* v. *Blumstein* (1972) most states adopted closing dates of 30 days or fewer.[9] Maine, Minnesota and Wisconsin adopted EDR between 1973 and 1976 and maintained it through 1992. The coincidental timing of these states' actions owes much to a national campaign by Democrats to facilitate voter registration. While ultimately unsuccessful at the national level, EDR and mail-in voter registration provisions were passed in a number of states. In Minnesota and Wisconsin Election Day Registration was a partisan issue embraced by state governments solidly under Democratic Party control, whereas in Maine the EDR proposal sparked little factional rancor. Although Democrats hoped EDR would bolster voting among minorities, the poor, and those living in inner cities (traditional party strongholds), there is little to suggest that anyone anticipated that the middle classes would substantially benefit from EDR (Cook, 1977: 912–915). A more detailed discussion of data sources and coding issues is located in the Appendix.

With our data and analytic structure in place, we now turn our attention to testing the hypothesis that adopting EDR will most benefit the turnout of those with middle income and medium education.

4. Data analysis

As a first cut at the data, Table 1 offers a straightforward overview of EDR's apparent effects on changing voter turnout at several SES levels. Turnout in 1972 for each of the SES categories was simply subtracted from that found in 1992. Table 1 compares turnout change between EDR states and other states across each of nine income and education categories.

The most significant turnout benefit accrues among middle class residents of EDR states. Table 1 confirms that after 1972 middle income and education (high school education and just below average income) citizens living in EDR states reported 7 percentage point higher turnout than did their counterparts in other states, while those with some college and upper middle income enjoyed a 3% larger growth in turnout if they lived in a state that implemented EDR. Once the confounding effects of Southern states are removed, the turnout associated with EDR's initiation increased by about one additional percentage point for lower middle class voters.[10]

While our initial look at the data provides solid evidence of our models' veracity, the imposition of multivariate controls poses a more rigorous test. To predict voter turnout probabilities we estimated a logistic regression LSDV including dummy variables from all states (save North Dakota and the District of Columbia), and numerous other contextual and demographic control

Table 1. Election day registration's effect on turnout change: 1972 to 1992

Education level	Income quartile	EDR YES	EDR NO Entire U.S.	EDR NO Non-South
Grade school	lowest	–14.6%	–.2%	–3.9%
High school	second	8.2%	1.1%	.3%
Some college	third	4.6%	1.2%	.9%
4 yr. degree	highest	5.0%	3.3%	3.3%

Source: The 1972 and 1992 Current Population Surveys.
Note. Figures are percentage point differences (i.e., [1992–1972]). Thus, negative values represent a net turnout decline over these years, while positive percents indicate increased voting for that SES category. North Dakota was omitted from the analysis. Variable coding is detailed in the Appendix.

Table 2. Predicted turnout from adopting election day registration, by SES

Education level	Income quartile	EDR YES	EDR NO	Difference
Grade school	lowest	30.4%	26.6%	2.8%
High school	second	55.1%	51.7%	3.4%
Some college	third	79.8%	77.5%	2.3%
4 yr. Degree	highest	89.8%	88.5%	1.3%

Source: The 1972 and 1992 Current Population Surveys.
Note. Figures are probabilities computed from logistic regression coefficients. The least quares dummy variables logistic equation controlled for election year, state, as well as EDR. Variable coding is detailed in the Appendix.

variables. For ease of interpretation, we converted the logistic regression coefficients into the probabilities/percentages that are reported in Table 2. The coefficients are reproduced in the Appendix.

Those having average income and education see their turnout increase more than other SES groups after EDR. In particular, a high school educated person earning just under the median income is predicted to gain the most turnout (3.45%) from living in a non-south state where EDR is implemented. This figure assumes that the citizen is a median age (42) white male. These predicted turnout benefits are conservatively reported in Table 2; being non-white, older, or female further boost one's turnout probability under EDR. In sum, adopting EDR neither yields a proportionately greater turnout advantage

to the best off, nor to the socio-economically most disadvantaged. Instead, as predicted by the model, once the registration hurdle is virtually removed we find the greatest turnout benefits amass to a SES group likely to have participation skills and motivation: middle class citizens.

5. Summary

Employing a longitudinal perspective, this paper demonstrates that election day registration (EDR) has different effects on various education and income groups. This contrasts sharply with much of the previous empirical research using cross-sectional designs. Moreover, it is also demonstrated that EDR did not produce the greatest turnout gains among citizens who were initially the least participatory. Rather, those having a high school education and just below middle income increased their turnout more under EDR rules than did their counterparts in other states. This turnout expansion among middle class citizens was the largest magnitude and the most significant single effect associated with the adoption of EDR.

This empirical finding has important policy implications, foreshadowing the likely impact of the National Voter Registration Act (NVRA). The passage of this legislation facilitating a national implementation of motor voter and public service agency-based registration was accompanied by advocates' claims that these provisions would electorally empower the lower classes. Similarly, opponents feared that these new voters would be overwhelmingly liberal Democrats. Although not specifically analyzing these programs, this study's finding that the greatest possible easing of pre-registration requirements principally benefits middle-class citizens implies that the hopes and concerns held on both sides of the ideological battle over voter registration rules are likely misplaced.

More than anything else, we believe that our research reinforces the enduring political intuition that political participation requires political mobilization and education. Absent these prerequisites, simply reducing citizens' administrative costs modestly affects the likelihood that they will vote.

Notes

1. Although this paper examines voter registration laws, we focus on turnout percentages rather than registration percentages. Little reason exists to register voters other than to establish their eligibility to vote. Additionally, the variables that predict registration are the same factors contributing to higher turnout; not surprising since, historically, up to 90% of those registered vote (Erikson, 1981).
2. Just as the costs of registering are assumed to reduce turnout, it is equally plausible that increasing the benefits of voting will increase turnout. Some authors (e.g., Burnham, 1982)

have emphasized that the benefits to voting have decreased for lower SES voters because no party is truly responsive to their needs; thus, they have been demobilized from the electorate. Other authors argue that declining partisan mobilization efforts have reduced perceived voting benefits (Rosenstone and Hansen, 1993; Hill and Leighley, 1994). Of course, all of these cost–benefit analyses of voter turnout ultimately trace their intellectual roots to Downs (1957).

There is general agreement that the mean overall increase in turnout attributable to a reduction in existing barriers to registration (i.e., EDR) is unlikely to exceed ten percentage points.

3. While not directly considering voter registration, Oliver (1996: 510) finds that liberalizing absentee voter eligibility may enhance the turnout of those groups already disproportionately represented in the voting electorate.

4. The use of models incorporating successive "hurdles" in studying turnout is not entirely novel (Cox and Munger, 1990; Fort, 1995). These models may also be applied to the analysis of a number of other social science problems (Grofman and Merrill, 1995).

5. We may wish to permit s to vary across subgroups, but we will neglect that complication in this illustrative discussion. Note that we may think of the value of H we need to surmount as analogous to a passing score or threshold value.

6. Although this theoretical expectation may be novel, some political practitioners have anecdotally observed that EDR should benefit the middle class the most, in part because even when unregistered they are more likely to know the polling place's location than are other groups (see quotes in Wolfinger, 1993: 17).

7. Our approach may be reminiscent of Fenster's (1994) aggregate longitudinal design. We gain purchase lacking from previous studies, though, by utilizing survey data to consider the compositional consequences of change in registration laws and the potential confounding impact of pre-existing SES and participation differences across the states. We believe that this design avoids many of the limitations inherent in previous work.

8. In particular, since citizenship status is one of the CPS filter questions (not true for most surveys) we avoid the complication of trying to estimate the proportion of non-citizens among those of voting age by simply excluding non-citizens from our data base. Aggregate data, such as that reported by Secretaries of State, presents particular problems when calculating the citizen voting age population (the denominator in the turnout equation) over a period of years for states experiencing an increasing influx of immigrants. The citizen population as a proportion of the total population has fluctuated considerably in states such as California, Arizona, New Mexico, Texas, Colorado, Florida and New York in recent years.

9. By 1988 only two states had advance registration requirements of more than 30 days; subsequent court rulings allowed Arizona and Georgia to maintain these earlier closing dates.

10. While the three EDR states exhibit generally similar turnout patterns at each income and educational level, an anomaly is evident in the first row of Table 1. The substantial turnout decline (14.6%) reported for the least educated poor is a result of outliers in Maine.

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174

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Appendix

Information on EDR in Wisconsin and Minnesota came from Smolka (1977). Details on the history of EDR in Oregon were generously provided by Michael Cox, Assistant Director of Elections for the Multnomah County Clerk's office in Oregon. Maine's EDR procedures were obtained during a telephone conversation with Mary Lou Suchar, Elections Bureau clerk at the Secretary of State's office. North Dakota was omitted from all analyses as it neither requires voter registration, nor altered its procedures during the study period.

Variable coding

South: The location of residence, as observed by the interviewer. The eleven southern states are: Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Texas and Virginia.

Education: A series of dummy variables:

Label	*Substantive meaning*
Grade school:	Grades 1–8
High school:	Grades 9–12
Some college:	Grades 13 and 14
4 yr. degree:	Grades 14 and 15 (including diploma)

Election Day Registration (EDR): Represents a *change* in election day registration, because no state requiring registration had this system in 1972, but three states (Maine, Minnesota, and Wisconsin) used in the 1992 presidential election (Smolka, 1977; Council of State Governments, 1989).

Family income (quartiles): Our tests show that the income of EDR state residents does not differ, on balance, from that in non-EDR states. Thus, a more important concern is the incomparability of income categories over time. To minimize the confounding effects of inflation or other possible time-dependent income covariates, family income was separately divided into national quartiles for each of the survey years. The cardinal (dollar) values of each income quartile by year are reported below.

1972 Values		**1992 Values**	
Label	*Substantive meaning*	*Label*	*Substantive meaning*
Lowest:	under $ 6,000	Lowest:	under $15,000
Second:	$6,000–$9,999	Second:	$15,000–$29,999
Third:	$10,000–$14,999	Third:	$30,000–$49,999
Highest:	$15,000 and over	Highest	$50,000 and over

Table A. Logistic regression (LSDV) model predicting voting in 1972 and 1992, by EDR and SES and numerous other control variables

	b	se
EDR	.393***	.078
Closing date (days)	–.001	.003
Educ. Grade school	.728***	.181
Educ. High school	1.451***	.179
Educ. Some college	2.285***	.181
Educ. 4 yr. Degree	2.837***	.182
Educ. grad. school	3.140***	.185
Income second	.312***	.021
Income third	.644***	.022
Income highest	.898***	.025
Age in years	.042***	.001
Employed	.179***	.031
Married	.202***	.017
Active Motor Voter	.244***	.060
Sex (male)	–.224***	.015
Race (white)	–.092***	.024
Year (1992)	–.255***	.017
Constant	–2.822***	.231
–2LL	113,202	
n	108,345	
Predicted correctly	74%	

***p < .001; **p < .01; *p < .05

Note. The control dummy variables for the states have been omitted due to space considerations.