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GOING POSTAL: How All-Mail Elections Influence Turnout

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We examine the question of whether or not reducing the costs of voting by conducting elections entirely through the mail rather than at the traditional polling place increases participation. Using election data from Oregon, we examine whether or not elections conducted through the mail increase turnout in both local and statewide elections. Using precinct-level data merged with census data we also examine how postal voting may alter the composition of the electorate. We find that, while all-mail elections tend to produce higher turnout, the most significant increases occur in low stimulus elections, such as local elections or primaries where turnout is usually low. The increase in turnout, however, is not uniform across demographic groups. Voting only by mail is likely to increase turnout among those who are already predisposed to vote, such as those with higher socioeconomic status. Like other administrative reforms designed to make voting easier, postal voting has the potential to increase turnout. However, the expanded pool of voters will be limited most likely to those already inclined to vote but find it inconvenient to go to the polling place. This conclusion is consistent with the growing body of research that suggests that relaxing administrative requirements is not likely to be the panacea for low turnout among the disenfranchised.

Key words: early voting; elections; Oregon; turnout; vote by mail.

Innovations in election administration are widening the alternatives voters have in casting ballots. Voters can turn up at a specially designated polling station prior to election day, cast a vote early by mail, or even vote on the Internet. Increasingly, these methods are being explored as replacements or alternatives to the traditional polling place. Not only are these alternative methods offered as a means of decreasing the costs of the administration of elections but they are also intended to make voting easier. The reasoning is

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that if voting is easier more voters should turnout for elections. In this article, we examine how the adoption of all-mail elections as a replacement for the traditional polling place impacts political participation.

Prior to these latest innovations in voting, some states relaxed eligibility requirements for absentee voters and now allow permanent absentee status so that voters can cast their ballots by mail. In states where these reforms have been implemented, a substantial proportion of the electorate has chosen to vote absentee rather than vote in person at the polling place. In California and Washington, 20% of those voting in the 1996 presidential election chose to vote absentee (California Secretary of State, 1996; and Washington Secretary of State, 1996). In Oregon, almost half of those participating in the 1996 presidential election chose to do so by mail (Oregon Secretary of State, 1996). The high number of voters registered as absentee is partly a consequence of the state's experimentation with vote *only* by mail (VOBM) elections. In January of 1996, Oregon conducted a special election by VOBM to fill a U.S. Senate vacancy. This represented the first time a state elected a federal candidate entirely by mail. Following the special Senate election, surveys showed strong support for VOBM with 77% favoring all-mail over polling place (PP) elections (Southwell and Burchett, 1997) and 79% agreeing that voting by mail is more convenient than voting at a polling place (Traugott, 1996).

The popularity of voting by mail coupled with the more expensive administrative costs of making polling places available to fewer voters has prompted policymakers to consider doing away with polling place elections altogether by conducting elections entirely through the mail. While some states have experimented with VOBM for local elections for years, only recently have states seriously considered extending the practice to statewide races. The state of Oregon anticipates saving $3,021,709 per year by doing away with polling place elections and conducting all elections by mail (Oregon Secretary of State, 1998). Other countries are also experimenting with VOBM. In New Zealand, a referendum on compulsory retirement savings held entirely by mail in September of 1997 marked the country's first use of a national postal ballot and saved an estimated $US 3.6 million (New Zealand Press Association, 1997). Besides cost savings, policymakers have noted that VOBM elections have the added benefit of increasing turnout. When election officers mail out ballots, all the recipient needs to do is fill it out and send it back within a specified time period. This makes voting easier. The potential benefits of postal voting prompted Oregon's Secretary of State to sponsor a successful citizen initiative in 1998 to extend VOBM elections to biennial primary and general elections. Such a reform represents a radical change in the way votes are cast and raises important questions about the impact of VOBM elections on the democratic process.

THEORY AND EXPECTATIONS

Theoretical models of voting typically characterize the decision to vote as a function of collective and individual benefits weighed against the cost of voting (Downs, 1957; Riker and Ordeshook, 1968). A voter will go to the polls if

$$pB + D > C,$$

where B denotes the collective benefits of voting such as having a desired candidate win and D signifies the positive sense of fulfilled civic duty (or any other selective benefit). Because there is some uncertainty that the potential voter will cast the winning ballot, p signifies the probability of deriving that benefit. On the right-hand side of the comparative statement, C represents the costs of voting, which include the costs of registering to vote and getting to the polls on election day. Reforms intended to increase turnout have been aimed at reducing costs (the right-hand side of the statement) rather than increasing the benefits of voting. In turn, empirical examinations of low turnout have also focused on the various costs of voting (Piven and Cloward, 1988; Teixeira, 1992; Wolfinger and Rosenstone, 1980).

Although theory suggests that reforms designed to make voting easier will increase turnout among those least likely to vote, the empirical evidence is mixed. Early studies focusing on institutional arrangements such as registration laws suggest that lowering the costs of voting helps to expand the electorate particularly to include those most affected by such barriers. Wolfinger and Rosenstone (1980) report that relaxing registration requirements helps to expand marginally the electorate, particularly among groups with low levels of participation such as those with lower levels of education. Similarly, Piven and Cloward (1988) claim that easing restrictions on voter registration will make the voting electorate more demographically representative.

However, the empirical evidence from more recent studies suggests that reforms designed to make voting easier may not make the electorate more demographically representative and may even further bias the electorate in favor of the better-off. For example, Calvert and Gilchrist (1993) conclude that easier voter registration does little to alleviate class bias among the voting electorate and may even advantage high-SES citizens. Similarly, Brians and Grofman (1999) find that early day registration produces the greatest turnout gains among the middle class. As for postal voting, the liberalization of absentee laws appears to benefit Republicans who are thought to have a turnout advantage in absentee ballots (Jeffe and Jeffe, 1990; Oliver, 1996). These partisan differences may be due more to self-selection than mobilization as persons who vote early are likely to be educated, active in politics, and partisan. This

suggests that the electorate may not be expanded by absentee voting at all, but instead, more voters are choosing to vote by mail as an alternative to precinct voting (see Karp and Banducci, in press).

What little empirical research there has been on the impact of postal voting on participation tends to focus on absentee voting and suggests that turnout is higher in states that give more people the choice of voting by mail. For instance, Oliver (1996) reports that states with liberal absentee laws have higher overall turnout. Dubin and Kalsow (1996, p. 388) conclude that the liberalization of absentee voting in California may have increased political participation in primaries, although not necessarily in general elections. Unlike absentee voting, VOBM elections do not offer voters the choice of voting in person. Therefore, it is possible that some people may find the procedure more convenient than voting in person, while others may find it less convenient. The VOBM procedure usually has been used in special and local elections (elections where turnout is historically low). In these elections, VOBM elections appear to have higher turnout than local elections conducted at the polling place (Jeffe and Jeffe, 1990, Magleby, 1987; Rosenfield, 1995). Examining eight local California and Oregon elections, Magleby (p. 82) found higher turnout in VOBM elections in all but one case. In the VOBM elections, turnout increased among all socioeconomic groups leading Magleby to conclude that no group is disadvantaged by the procedure. However, Magleby attributes part of the increase in turnout to the novelty of VOBM. Other researchers have suggested that turnout levels subside somewhat as voters become more accustomed to the technique and media attention fades (Jeffe and Jeffe, 1990). Little is known about how turnout might be affected in statewide elections where the electorate is likely to be more diverse and the election more salient. If voters are required to participate through the mail rather than in person, some fear that persons who are mobile, such as those who do not own their own homes, will be further disadvantaged. While VOBM elections tend to make the act of voting more convenient for some voters, mobile voters such as young people and renters may find it costly to keep election officers informed of current addresses.

THE USE OF POSTAL VOTING IN OREGON

Although many jurisdictions in the United States currently employ a form of VOBM, its use has generally been confined to substate jurisdictions and nonpartisan elections (Hamilton, 1988). In Oregon, however, VOBM has been in use since 1981 at the local level, and it was extended to all special elections in 1987. In June of 1993, Oregon held its first statewide election by mail to decide an urban renewal measure. By mid-2000, eight more statewide elections had been conducted entirely through the mail. A special election to nominate candidates for a U.S. Senate seat vacated by Bob Packwood marked the first

time a state conducted a mail-only primary election to nominate candidates for a federal office. Oregon also held the general election for the vacant Senate seat by mail in January 1996, and the state's presidential primary by mail in March 1996 and in May 2000. In November 2000, Oregon held the first VOBM presidential election.

Therefore, Oregon's experience with VOBM provides a useful set of data for making comparisons between polling place and mail elections over time and across all types of elections. In a recent study, Southwell and Burchett (2000, p. 76) examined 48 statewide candidate elections in Oregon and found that VOBM is expected to boost turnout by 10%. Their analysis, however, relies on just three VOBM elections—the special Senate primary and general election held in 1995 and 1996, and the presidential primary held in 1996. Rather than restrict the analysis to statewide candidate centered elections, we include in our analysis other statewide elections featuring ballot initiatives as well as local contests. In using a dataset that encompasses all types of elections over time, we can examine the effect of postal voting on turnout in elections that vary in saliency and intensity of mobilization. We also rely on precinct-level data and census data to examine how VOBM elections alter the composition of the electorate. The potential for postal voting to increase turnout is likely to depend on the type of election. In high stimulus elections—such as gubernatorial or Senate contests—turnout is usually at its highest level, while local elections, where campaign intensity and interest are low, typically attract the fewest voters. Because VOBM does not increase the pool of registered or, therefore, potential voters but only makes voting more convenient for those already registered, we expect the greatest increase in turnout to occur in the low stimulus contests by activating those citizens who participate in high stimulus elections but not local elections.

COMPARING TURNOUT IN VOTE ONLY BY MAIL AND POLLING PLACE ELECTIONS

To examine whether VOBM elections produce higher turnout than polling place elections we begin with an analysis of data from 27 statewide elections across a 14-year period from May 1986 to November of 2000.[1] Turnout is measured as the proportion of registered voters actually casting ballots.[2] Because the type of election is likely to influence turnout, we compare turnout across election types that vary in intensity from presidential elections and other high profile statewide elections to local contests.

For the midterm general and primary elections, we have only one VOBM election for comparison. As a comparison with biennial primary elections conducted by polling place we use the December 1995 Senate primary. We also compare biennial (midterm) general elections to the January 1996 Senate

election. While these VOBM elections technically were special elections, they were more similar to other primary and midterm elections in media coverage and intensity. Both the primary and general Senate elections were competitive particularly since it was the first time since 1968 that an Oregon Senate seat had not been contested by an incumbent. Moreover, the general election was held only 6 weeks after the primary, making the campaign more concentrated and intense. In the end, the Democratic candidate, Ron Wyden, won the election by 1.4% of the vote, or 18,220 out of 1.2 million cast.

As Table 1 shows, differences in turnout between VOBM and PP elections are greatest in low salient elections. Turnout in the presidential election, the special Senate election, and the two presidential primaries conducted was roughly equivalent to the average turnout in comparable elections held at the polling place. However, turnout in the special Senate primary was about 12% higher than the average for other midterm primaries. VOBM elections are also associated with higher turnout in special statewide elections that are either held on special days or are held on one of the nonprimary or nongeneral election days designated by the Secretary of State. These elections are typically held to decide the outcome of ballot measures that qualify for the ballot either through a citizen initiative or a legislative referral. Within the 14-year period under study, nine special statewide elections were held to decide 22 ballot

TABLE 1. Comparing Turnout in Vote only by Mail and Polling Place Elections (1986–2000)*

	Polling Place	Mail	Difference
Statewide Races			
Presidential	78.2% (3)	80.0% (1)	1.8%
Midterm General	69.2% (4)	66.3% (1)	–2.9%
Presidential Primary	56.1% (2)	57.6% (2)	1.5%
Midterm Primary	45.4% (5)	57.9% (1)	12.5%
Special Statewide (ballot measures)	37.5% (4)	44.5% (5)	7.0%
Local Races			
Candidates and Issues**	18.7% (13)	45.2%	26.5% (13)

Source: Oregon Secretary of State.
Note: Number of elections in parentheses.
*See appendix for specific elections.
**For these elections, some counties administered vote only by mail elections and other counties held polling place elections. See appendix for description.

measures.[3] The elections held by VOBM produced an average turnout that was seven percent higher than those held at the polling place.[4]

To investigate whether VOBM elections produce higher turnout in local elections, which typically attract less interest and less attention than the statewide elections examined above, we rely on quasi-experimental data. In 13 elections held between 1990 and 1995 for directors of local body governments, most counties held mail ballot elections; a few counties chose to hold polling place elections for administrative convenience or for concern over the integrity of the process.[5] Therefore, natural control and treatment groups are formed. By looking at just these elections, we can hold constant the effects of the type of election and campaign intensity, both of which may affect turnout. As seen in Table 1, for these 13 elections, average turnout in the VOBM elections was 45.2%, while average turnout in the counties with polling place elections was 18.7%.

Of course, other characteristics of the two groups may vary since they are naturally occurring groups. The seven counties that chose to hold their elections at the polling place in at least 1 of the 13 elections have an average polling place turnout that is about 9% lower than in the counties that opted to conduct the election by mail.[6] These counties also have a household median income that is lower than the other counties. Nevertheless, the gap in turnout between these groups cannot be explained by these differences alone. Later, when these counties held elections by mail instead of at the polling place, the average turnout in a local election increased to 46% and was not significantly different from the counties that had earlier opted for all mail elections.

These results so far suggest that mail balloting has the potential to increase turnout in elections that typically have low turnout such as local elections. The method of polling produced the biggest difference by far in local elections. The results also suggest that mail balloting will not have the same impact in more highly salient elections where turnout tends to be considerably higher. These findings contrast with those of Southwell and Burchett (2000) who claim that turnout in high profile elections can be expected to increase by about 10%. However, their comparison rests on three VOBM elections and only one of these elections (the special Senate primary) had substantially higher turnout (see Table 1). Compared to the last three presidential elections, turnout in the 2000 election increased by less than two percent despite a VOBM election *and* one of the closest presidential contests in Oregon's history.

MATCHING CENSUS DATA TO VOTING DATA AT THE PRECINCT-LEVEL

While the previous analysis suggests that turnout will increase particularly in local elections, it is not clear whether VOBM elections increase turnout uniformly. In his study of VOBM, Magleby (1987, pp. 84–85) finds a strong correlation (ranging from $r = .96$ to $r = .82$) between turnout in polling place

elections and turnout in local VOBM elections, indicating that the same precincts with low turnout in polling place elections have low turnout in VOBM elections. Finding few significant differences in the impact of demographic variables on the difference in turnout between the two types of elections, Magleby (p. 87) concludes that the "demographic composition of the participants in the two types of elections is not very different." This conclusion, however, is somewhat tenuous. Even if the same variables predict turnout in mail balloting and in polling booth balloting, this does not demonstrate that mail ballots do not affect the SES composition of the electorate. The composition of the electorate can change as each SES group's proportion of the voting population changes even if there is a strong correlation between turnout in two types of elections.[7]

As studies of turnout in federal elections show, individuals with higher levels of education and income are more likely to register and to vote. Although Magleby's (1987) contention is that VOBM elections do not affect the composition of the electorate, his results are confined to local elections. The other studies examining reforms intended to reduce the costs of voting, such as registration requirements and absentee voting, are inconclusive about the effects these reforms have on the composition of the electorate. However, based on the results of studies that show those predisposed to voting are more likely to be advantaged by these reforms, we expect postal voting to increase turnout among the better educated and higher earners. These groups are likely to be predisposed toward voting but may be inconvenienced by the frequency of local elections and, therefore, may not participate. In contrast, lower socioeconomic groups who may be more alienated from the political process are less likely to be mobilized by the convenience of voting by mail. We expect those who are highly mobile, such as renters and younger voters, to be less likely to vote in VOBM elections. We also expect higher turnout among rural voters whose costs of getting to the polls are increased by the distance of polling places and among older voters who may have physical limitations.

To test these hypotheses, we use the voting precinct as our unit of analysis as individual-level data for polling place and VOBM elections do not exist.[8] The use of aggregate data poses limitations on our ability to draw inferences about individual behavior. For instance, we cannot infer that a voter living in a rural county, holding other factors constant, is more likely to vote in a VOBM election than a voter from an urban center. However, we can draw conclusions about precincts that display particular characteristics based on census data that has been aggregated to the precinct level.[9]

In the following analysis, we compare six elections; half of which were conducted at the polling place and the other half by mail. We match a VOBM election with the most comparable polling place election. Therefore, we compare the special primary and general elections filling Senator Bob Packwood's

seat in 1995 and 1996 to the preceding primary and general elections held in May 1994 and November 1994. We also compare the presidential primary held in 1992 (polling place) to the 1996 presidential primary (VOBM). Even though the largest impact of VOBM elections appears to be in local elections, we are not able to analyze turnout because no PP elections were held during the period of time for which we have precinct-level data. This "intentional" selection of elections for comparison has the potential drawback of omitting an important variable, such as the timing of the election, that may account for the change in turnout between the two elections.[10] Nevertheless, these cases are matched on the type of election—a variable that has the largest impact on turnout between elections (see Table 1).

We use data from the 1990 census to measure demographic characteristics of the electorate and match these with voting data from precincts. Block groups are the smallest geographical units in which long-form census data (including such variables as education and income) are available. These data have been aggregated to different geographical units and while similar in size do not match up perfectly with one another. However, using Geographic Information Systems (GIS) we are able to obtain precise estimates of the overlap between these geographical units. Using areal interpolation as outlined by Flowerdew, Green, and Kehris (1991, see also Goodchild and Lam, 1980), we reaggregate the census block group data to the voting precinct level.

The process of areal interpolation matches a source area (census block groups) with a target area (voting precincts). Where the source area (A_s) and the target area (A_t) overlap is referred to as an intersection zone (A_{st}). The value of a variable, Y, for a target area will be equal to the weighted average. The weight is the area of the intersection zone:

$$Y_1 = \sum_s YstAst / \sum_s Ast$$

For example, if a voting precinct intersects two block groups and 50% of each block group makes up the voting precinct, the value for the variable for the voting precinct would be the sum of 50% of the total in each block group. However, simple areal interpolation does not adjust for differential population densities and assumes uniform population densities.[11]

The availability of digitized precinct maps necessary for the areal interpolation, together with the availability of voting data, restricts our analysis to 385 precincts in Jackson, Lane, and Washington counties.[12] Nevertheless, these precincts are in many ways representative of the state as a whole and together comprise about a fourth of the state's population. Moreover, the average turnout in these precincts closely matches statewide turnout.[13] These precincts range from a total population of 16 to 4,262 persons, with a median of 1,497; the

geographic size ranges from .02 square miles to 830 square miles, with a median of 20 square miles.

We have constructed several variables from the areal interpolation that characterize the social and demographic makeup of the precincts. These variables are also related to the hypotheses we wish to test. To examine the effects of mobile voters, we use the percent of renters in a precinct and the median age of residents in the precinct. The socioeconomic makeup of the precinct is measured by median income and the percent with a college degree. The percent of the precinct living in rural areas is used to test whether distance from a polling place has an effect on turnout difference. As an indicator of the racial makeup of the precinct, we use the percent who identify themselves as nonwhite in the census. To measure ethnicity, we rely on the percent in the precinct that identify as Hispanic.

To identify changes in the composition of the electorate, we estimate a model that predicts change in turnout between a VOBM election and a comparable polling place election. One method of estimating change would be to use demographic characteristics of the precinct to predict the difference between turnout in VOBM elections and a comparable PP election as Magleby (1987) has done in his analysis. However, because observed changes between PP and VOBM may be due to regression toward the mean turnout and cannot be distinguished from true change, this method is undesirable (Markus, 1979, p. 47). The preferable method is to estimate turnout in VOBM elections as a function of turnout in a comparable PP election and include separate terms that identify the demographic makeup of the precincts. Our models are estimated as follows:

$$Y_{\text{VOBM}} = a + \beta_1 * Y_{\text{PP}} + \beta_2 * X_{\text{RURAL}} + \beta_3 * X_{\text{NONWHITE}} + \beta_4 * X_{\text{HISPANIC}} + \beta_5 * X_{\text{COLLEGE}} + \beta_6 * X_{\text{RENT}} + \beta_7 * X_{\text{AGE}} + \beta_8 * X_{\text{INCOME}}$$ [14]

Thus, the estimated coefficients will indicate what sociodemographic characteristics contribute to higher or lower turnout in VOBM elections, holding constant turnout in a polling place election. For example, a statistically significant negative coefficient for percent nonwhite would indicate that as the percent of nonwhites in a precinct increases, turnout in the VOBM election decreases. For another example, if the coefficient for percent of renters in a precinct is negative and significant, we would expect that as the percent of renters increased in a precinct, turnout in the VOBM election would decrease holding constant turnout in a polling place election. A non-significant coefficient would indicate that the variable does not contribute to a difference in turnout between PP and VOBM elections. In sum, if there were no group differences in turnout between polling place and VOBM elections, the effects of social or economic

characteristics of precincts should not be significant once turnout in a similar polling place election is controlled for.

RESULTS

For all but one model, the results reported in Table 2 show that as the education levels, median age, and median income in a precinct increase, turnout in VOBM elections also increases when holding constant PP turnout. However, as the percent of nonwhite residents increases, turnout in VOBM elections is expected to decline. This is the case for both Democrats and Republicans in their respective primaries (although the coefficients for income are not significant in the Democratic primaries). Thus, the positive coefficient of .36 for percent college graduates in the special Senate election indicates that as the proportion of college graduates increases by 10%, turnout in VOBM elections is expected to increase by 3.6%. The significant negative coefficients for percent nonwhite residents in four of the five models indicates that as the percent of nonwhite residents increases by 10%, turnout in the VOBM election, controlling for the PP election, will decrease by 2 to 7% (depending on the type of election). Taken together, these results suggests that the affect of VOBM on the composition of the electorate is not uniform. Although we use aggregate data on a small sample of elections, our results suggest that the composition of the electorate changes in important ways that are consistent with our expectations that VOBM elections will not mobilize groups that traditionally participate at lower rates.

The results from the special Senate election also suggest that precincts with a higher percentage of renters are more likely to experience a decline in turnout in VOBM elections. This is also consistent with expectations because renters are typically more mobile which makes the delivery of the ballot more difficult. In the other models, however, the coefficient for renters is not significant and in two of the cases not in the expected direction.

While we must be careful in drawing inferences about individual behavior from these precinct data, they nonetheless suggest that VOBM increases turnout among those groups already most likely to vote—those who are white, educated, older, and have high incomes.[15] This is consistent with our expectations that the primary appeal of voting by mail is that it makes voting more convenient for those who are inclined to vote. However, convenience alone will not do much to increase the participation rates among groups who are either uninterested or alienated from the political process and therefore do not vote.

Survey data collected by the Center for Political Studies (CPS) following the Oregon special Senate election support these inferences revealing that respondents who were younger, had lower levels of education, and were newly arrived in the state were less likely to vote (Traugott, 1996, p. 6). We must

also note that contrary to our expectations, rural precincts, where voters must travel farther to a designated polling place, did not experience an increase in turnout except in the case of the Republican presidential primary where the coefficient is positive and approaching statistical significance. Although counter-intuitive, this finding is further substantiated by the CPS data which indicate that people living in Portland and the suburbs are more likely to say that mail balloting is more convenient than those living in rural areas (Traugott, p. 21).

DISCUSSION

Our analysis of aggregate turnout data show that while VOBM increases turnout, the most substantial effects on turnout are in local elections. These low stimulus elections, when conducted by mail are likely to expand the pool of voters to include those who already participate in high stimulus elections but cannot be bothered to go to the polls in low saliency elections. This conclusion, which supports a common theme in the recent research on political participation, is given more weight when examining the precinct-level returns and demographic characteristics. When controlling for polling place turnout in the precincts, voting only by mail appears to advantage those groups that are advantaged in other elections. Therefore, our evidence suggests that VOBM elections increase turnout especially among those groups already likely to vote in high stimulus elections.

We have not considered all factors that influence participation in our analysis. For example, party mobilization contributes significantly to turnout (Rosenstone and Hansen, 1993). In an analysis of absentee voting, Oliver (1996, p. 499) finds that when parties or other mobilizers send out pre-filled absentee ballot applications to their supporters, they are more likely to register as an absentee voter and consequently are more likely to vote. The difference, however, with all-mail ballot elections is that it makes it easier for more voters, not just targeted supporters, to participate. Since it requires less effort to return a ballot than it does to register or request absentee status, mobilization of registered voters is less of a factor in this analysis.

Our ability to generalize from Oregon's experience may be limited by the relatively small number of high profile elections conducted by mail. In addition, the VOBM experience may be different in states that are more diverse and have historically lower voter turnout. The effectiveness of VOBM elections on increasing turnout, as our analysis suggests, may depend on the socioeconomic status of a state's population. Oregon's experience with VOBM elections gives us reasonable confidence that the convenience associated with VOBM will offset the increased costs of obtaining information in these low salience elections. We might expect the costs of voting to be further reduced if the state pays for the costs of returning the ballot.[16] Because VOBM remedies just the inconvenience

TABLE 2. Estimating Differences in the Composition of the Electorate in Precincts Between Vote only by Mail and Polling Place Elections

	Presidential Primary (1996)††		Special Senate Primary (1995)		Special Senate (1996)
	Republican	Democrat	Republican	Democrat	All Voters
Constant	.26**	.04	.18**	.29**	.34**
	(.05)	(.07)	(.03)	(.03)	(.03)
Rural %	.02[b]	−.01	−.01	−.01	−.01
	(.01)	(.02)	(.01)	(.01)	(.01)
Nonwhite %	−.69**	−.30	−.32**	−.21[a]	−.38**
	(.18)	(.23)	(.09)	(.11)	(.09)
Hispanic %	.20	−1.05**	.36**	−.09	.40**
	(.25)	(.32)	(.09)	(.10)	(.08)
College graduate %	.28**	−.10	.14**	.13**	.36**
	(.06)	(.09)	(.04)	(.05)	(.04)
Rent %	.00	.08	−.03	−.03	−.08*
	(.07)	(.09)	(.04)	(.05)	(.04)
Median age (in 10s)	.06**	.05**	.03**	.02**	.02**
	(.01)	(.01)	(.01)	(.01)	(.00)
Median income (in 10,000s)	.01[a]	.01	.01**	.00	.01**
	(.01)	(.01)	(.00)	(.00)	(.00)
Polling place turnout in comparable election[a]	.173**	.69**	.56**	.59**	.23**
	(.048)	(.09)	(.03)	(.03)	(.02)
N	180	180	385	385	385
Adj R^2	.60	.52	.70	.64	.62

Source: Bureau of Census, Summary Tape File 3 and Washington, Lane, and Jackson County clerks.

Note: OLS coefficients. Dependent variable is turnout in VOBM elections. Standard errors are in parentheses.

†Presidential Primary (1992), Midterm Primary (May 1994), Midterm General (November 1994).

††Includes precincts from only Lane and Jackson counties.

**Significant at $p < .01$.

*Significant at $p < .05$.

[a] $p = .05$

[b] $p = .06$

of getting to the polling booth on a specific day, voting only by mail will tend to mobilize those who do not vote because of the inconvenience.

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APPENDIX

Sample of Elections used in Table 1

Presidential
- *Polling Place*: 1996, 1992, 1988
- *Vote only by mail:* 2000

Midterm General
- *Polling Place:* 1998, 1994, 1990, 1986
- *Vote only by mail:* January 1996

Presidential Primary
- *Polling Place:* 1992, 1988
- *Vote only by mail*: 2000, 1996

Midterm Primary
- *Polling Place:* 1998, 1996, 1994, 1990, 1986
- *Vote only by mail*: December 1995

Special Statewide (ballot measures)
- *Polling Place:* May 1997, May 1989, June 1989, November 1993
- *Vote only by mail*: June 1993, May 1995, May 1997, November 1997, November 1999

Local Candidates and Issues
- *Polling Place:* March 1995, September 1994, March 1994, September 1993, May 1993, March 1993, September 1992, June 1992, March 1992, June 1991, May 1991, March 1991, March 1990
- *Vote only by mail*: April 1996, March 1995, September 1994, March 1994, September 1993, May 1993, March 1993, September 1992, June 1992, March 1992, June 1991, May 1991, March 1991, March 1990

NOTES

1. May of 1986 was chosen since it predated the expansion of VOBM to all special elections.
2. We use voter registration lists as the denominator in our turnout estimates. Following the implementation of the National Voter Registration Act in 1995, names can no longer be removed from the registration rolls if voters have not voted. This introduces the possibility that the number of registered voters includes persons who no longer live in the county, which would lead us to underestimate turnout. Our dataset contains 13 elections since the implementation of NVRA. Eight of these elections are VOBM. Therefore, any observed changes in turnout between methods of election before and after 1995 are likely to be

conservative. Population estimates from the census could be used as an alternative measure, but since these don't vary over time they will be less reliable than voter registration lists. For primaries, we calculate turnout as the percentage of registered Democrats and Republicans casting ballots.

3. These measures covered a diverse range of issues such as the adoption of a sales tax, urban renewal, the right to die, use of state lottery funds, and nuclear waste disposal.
4. This difference cannot be attributed to differences in the number of measures appearing on the ballot. In a special election held by VOBM on November 2, 1999, nine measures appeared on the ballot but turnout was the lowest (41.8%) of any VOBM special statewide election.
5. Under the 1987 VOBM statute, county clerks were given discretion over the method of election. Given the complexity of these elections (overlapping local government districts) and their available computer system, some county election officials felt more comfortable with the traditional polling place elections. Other Oregon counties optically scan ballots which makes VOBM elections more cost effective (phone interview with Doyle Shaver, Douglas County Clerk, February 8, 1999). In the case of Malheur County, the county clerk wanted to avoid sending ballots to persons living across the border in Idaho who had a postal address in Oregon. This problem was later resolved (e-mail correspondence with Deborah DeLong, Malheur County Clerk, February 10, 1999).
6. These counties are Douglas, Hood River, Jefferson, Klamath, Matheur, Polk and Union.
7. To illustrate, imagine we have four SES quartiles, each with one fourth of the electorate, and that the turnout rates (from highest SES group to lowest) are 40%, 30%, 20%, and 10% of the electorates, respectively. Now, let us have a mail ballot such that turnout rates of every group change in accordance with Magleby's (1987, p. 84) best fitting model: $.99x - 6.31$ (where x is turnout in the polling place election and y is predicted turnout in the VOBM election). Now the proportions of the electorate will be 45.1%, 31.7%, 18.3%, and 4.9%, respectively. The lowest turnout groups are even less represented than before, and the highest turnout group is more represented.
8. Although Traugott (1996) and Southwell and Burchett (1997) use survey data to determine the characteristics of the Oregon electorate participating by mail in the special general election for the U.S. Senate, no comparable data exist on polling place elections. Therefore, it is difficult to determine whether the electorate differs in any significant way from a polling place electorate.
9. The use of aggregate data to examine variations in voter turnout across spatial and temporal units is not unusual. For example, Dubin and Kalsow (1996) use county-level data to examine the impact of demographic factors on absentee voting from November 1962 though November 1994. In an analysis of early voting in Texas, Stein and Garcia-Monet (1995) rely on county-level indicators such as the percentage of adult population Hispanic and median home value to explain the percent of county vote cast early.
10. An alternative explanation for any observed differences between the 1992 and 1996 presidential primary, would be the timing of the 1996 presidential primary which was moved forward from the traditional third Tuesday in May to the second Tuesday in March so that Oregon would play a more decisive role in electing the parties' nominees. Ballots were mailed out February 21–23, 1996, and were to be returned no later than March 12, 1996. However, the change in the timing of the primary did not have the desired effect, as other states also moved their primaries forward leading candidates to concentrate their efforts in other states, particularly in the south. For more information on intentional samples and matching observations see King, Keohane, and Verba, 1994 (pp. 200–206).
11. For a full explanation of areal interpolation, see Flowerdew, Green, and Kehris (1991) and Goodchild and Lam (1980).
12. Of the 36 counties in Oregon, only seven could make available digitized maps of precinct boundaries. For the selected elections, only these counties reported the number of registered

voters by party by precinct. Counties changed the boundaries of some of their precincts during this time. These changes, which affected a relatively small number of precincts, necessitated their removal from the analysis. As Washington County did not report the number of registered voters by party by precinct for the presidential primary in 1992, we were unable to include that county's precincts in that part of the analysis.

13. Washington County is in the northwest part of the state and includes the west side of Portland and the suburbs of Beaverton, as well the rural areas west of Portland. Lane County is located in the western middle of the state, stretching from the Pacific Ocean to the Cascade Mountain Range. Although mostly rural, the county includes the city of Eugene, which has a the second largest metropolitan area in the state and is the home of the University of Oregon. Jackson County is in the southwestern part of the state and includes the city of Medford.
14. This model is similar to a lagged endogenous variable model where Y_{PP} is analogous to Y_t1 *and* Y_{VOBM} is analogous to Y_{t2}. This model is a conservative test of the effects of the other independent variables as the presence of turnout in the previous polling place election will tend to dominate any other effects.
15. These findings also complement those of Brians and Grofman (1999) who find that relaxing registration requirements principally benefits middle class citizens rather than improving turnout among citizens who are initially the least participatory. The greatest increase in turnout was experienced by the middle-income and high school-educated groups. To test for curvilinear effects, we estimated our models using logged terms for percent college educated, median income, and median age. While these logged terms were significant, they did not alter the explained variance or the significance of other variables in the model. Therefore, for ease of interpretation, we report the unlogged coefficients.
16. Oregon voters had to pay the postage to return their ballots. Traugott (1996) finds that respondents who had stamps in their home at the time of the interview were more likely to vote than those who did not.

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