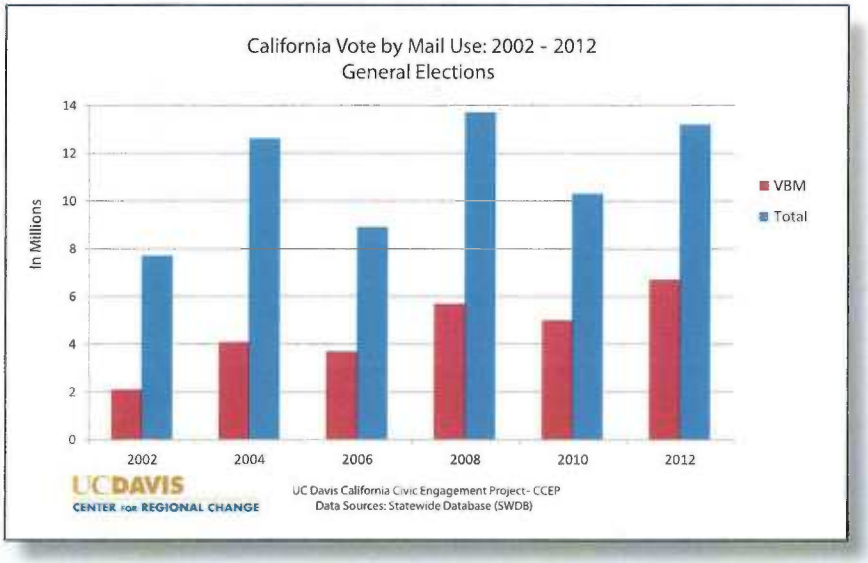
UCDAVIS
CENTER FOR REGIONAL CHANGE

The California Civic Engagement Project
Issue Brief
March 2014

Disparities in California's Vote-by-Mail Use
Changing Demographic Composition: 2002-2012

Increasing Proportions of Vote-by-Mail Ballots

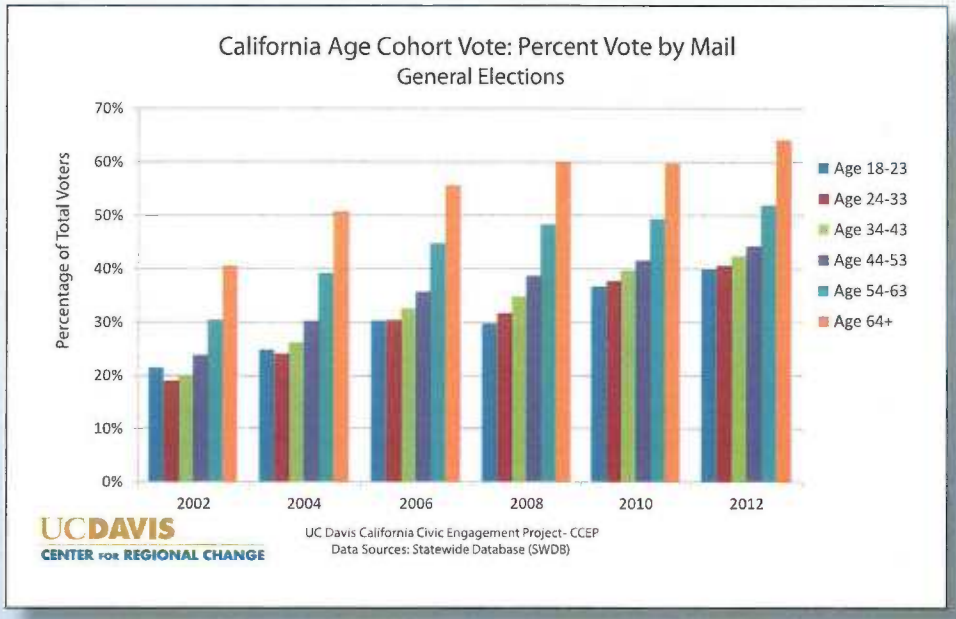


California has steadily increased its use of vote-by-mail (VBM) ballots over the past decade. Aided by the expansion of the state's permanent vote-by-mail option and outreach by many county registars, more Californians are choosing to cast VBM ballots. Just over fifty percent (6.7 million ballots) of the state's total ballots cast were vote-by-mail (VBM ballots cast by mail or dropped off at an official location), up from 27% in 2002. Within this high rate of VBM use is a great degree of variation in the use of this method by age, race/ethnicity and political party affiliation. Understanding disparities in VBM use is critical to assessing its impact on California's electorate to date, and in the future. Through the California Civic Engagement Project's analysis of Statewide Database Data, this brief identifies disparities in: (1) VBM use rates by sub-group and (2) the overall make-up of the state's VBM and poll voter populations.[1]

1. VBM Use Rates by Sub-Group

Youth and Older Voters: Disparities in VBM Use

Only voters age 55 and older use VBM at a rate greater than 50%. For voters age 64 and older, 64% (2 million) cast VBM ballots in 2012. It is the higher proportional use rate of these voters (along with their higher turnout rates) that is driving California's total 50% VBM use.[2]

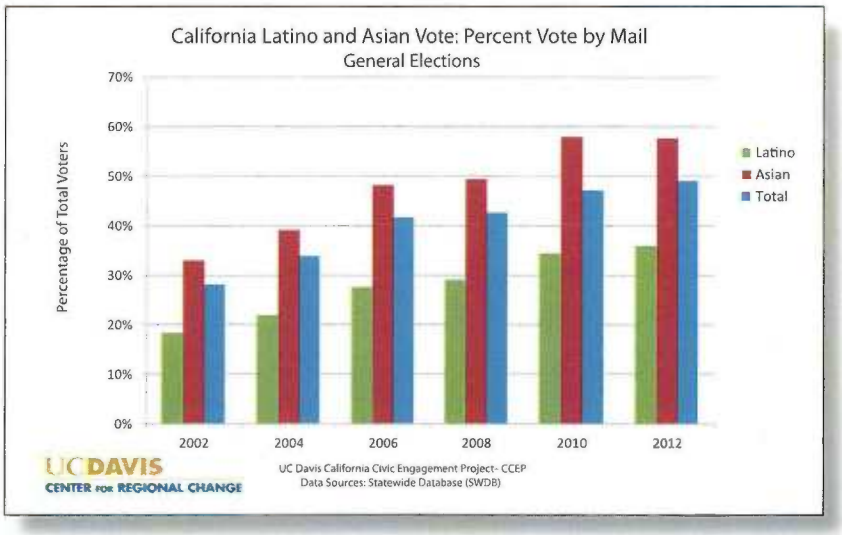


In contrast, youth voters (defined here as age 18-23) had the lowest use rate for VBM ballots of all age groups in 2012 – 39% (340,000 VBM ballots). The number of youth actually casting VBM ballots has increased 61% since 2004 (comparing presidential elections) resulting in a 13 percentage point increase in the proportion of youth using VBM since 2004. However, this increase in the percent use of VBM was the lowest of all age cohorts in California. Over the past decade, every other age cohort experienced an increase in their use rate of 20 percentage points or higher – meaning that youth are increasing their proportional use of VBM more slowly than the rest of the state's voters.

Note: The Statewide Database's 2002-2012 voter data files posted on their website are currently mislabeled by age. SWDB's voter file data is actually calculated for the following age groups: ages 18-23, 24-33, 34-43, 44-53, 54-63 and 64+.

Latinos and Asian VBM Disparities

Since 2004, Latinos more than doubled their number of actual VBM ballots cast (to 0.9 million), and increased their proportional use rate by 14 percentage points from 18.4% to nearly 37% in 2012. The number of Latino poll voters still increased by 8%. However this proportional use rate is far below the state's total 2012 VBM use rate of 51%. The increase experienced by Latinos in their proportional use of VBM is lower than the increase experienced by Asians, as well as the rest of the non-Latino voting electorate.



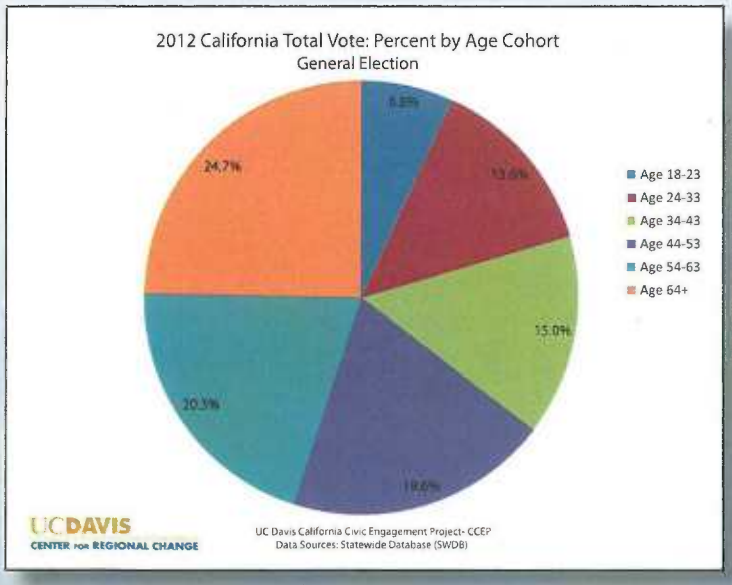
Asian voters in California are utilizing VBM at higher rates than Latinos and the general voting electorate. In 2012, 58% of all ballots cast by Asians were VBM. The actual number of Asian VBM voters in the state increased 79% (to 0.5 million) over the last decade. The number of Asian poll voters actually decreased by 15.7% (to 0.4 million). Asian use of VBM increased by over 19 percentage points, up from 39% in 2004. The gap between the Latino and Asian proportional use of VBM has grown over the decade – from 14.7 percentage points in 2002 to over 21 percentage points in 2012.

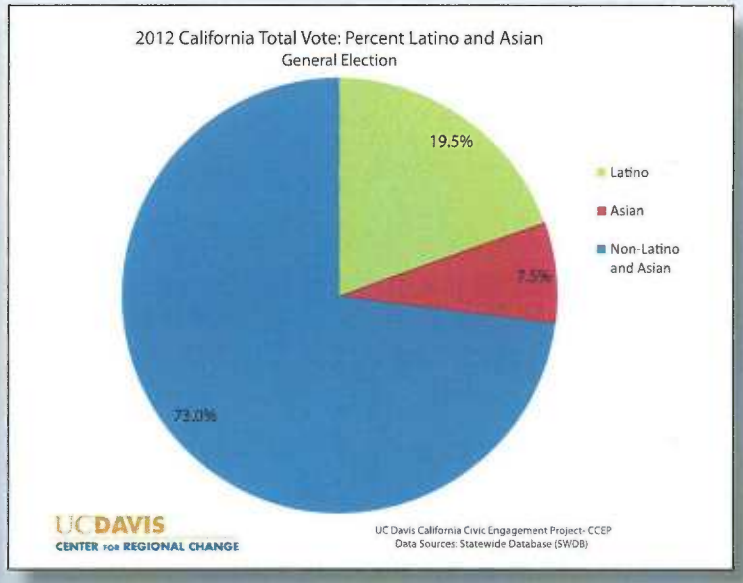
Political Party Affiliation: Higher Republican Use

In 2012, Republicans used VBM in somewhat greater proportions than poll voting - 53% compared with 48%. Voters affiliated as No Party Preference (NPP) used VBM at about the same rate as Democrats. Democrats increased their proportional use of VBM by 15 percentage points and NPP votes increased by 18 percentage points, where as Republicans increased their use by 14 points since 2004. As the VBM use rates for Republicans and Democrats have increased over the past decade, the gap between their rates has stayed very similar (declined by only a percentage point).

The California Electorate

In November 2012, California's total population of voters continued to increase in diversity. Latinos are now nearly 20% (2.5 million) of all participating voters in the state. Asian voters increased to 7.5% (950,000) of the state's vote and the voting electorate continued to get a little older; increasing its proportion of those age 64 and older. Youth voters made up 6.8% of California's voters.[3]



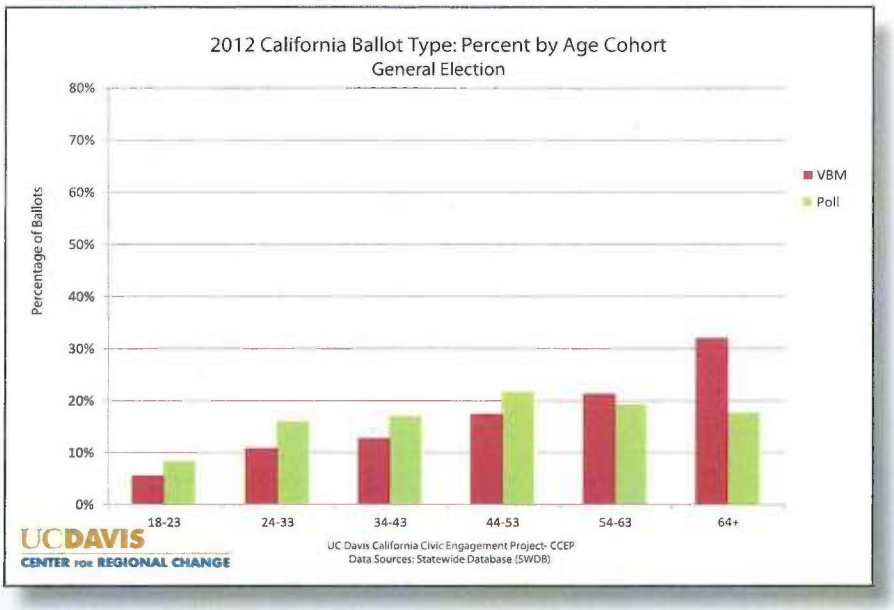


2. Composition of the State's VBM vs. Poll Ballots

Vote-by-Mail Impact on the Make-Up of California's Voters

Breaking down the state's voter population, California's voting sub-groups have very different proportional VBM use rates. The demographic make-up of the state's VBM voters differs compared to its poll voters. Overall, the VBM voter population can be summarized as older, less Latino, more Asian and less Democratic than poll voters.

VBM: Greater Proportions of Older Voters

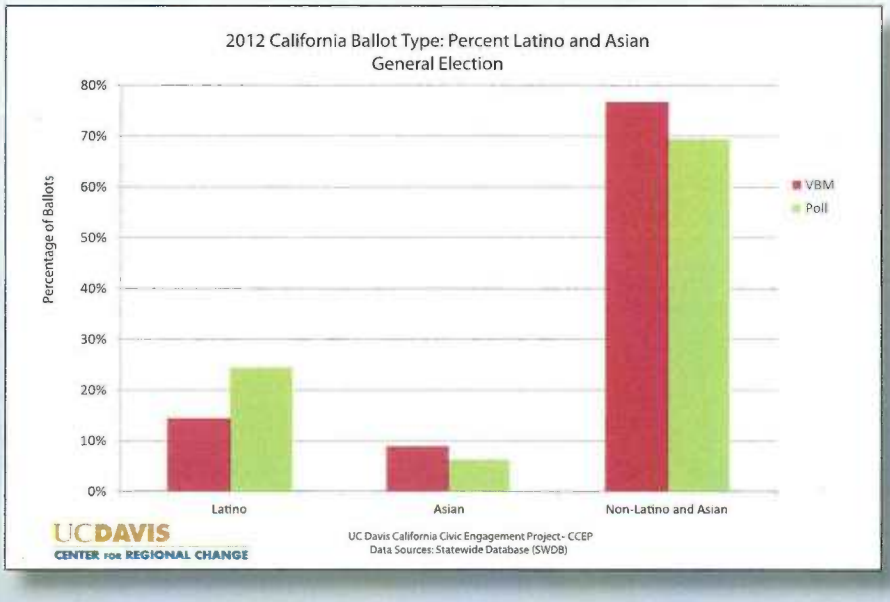


In 2012, 71% of VBM voters were age 44 and older, compared to only 58.5% of poll ballots. As with the state's overall voter population, voters age 64 and older hold the largest proportion of VBM ballots. In contrast, it is those age 44-53 who hold the largest proportion of poll voters – 21.7% (slightly decreased since in 2004).

Over the past decade, the VBM and poll voter populations in California have both increased in their proportions of older voters. In 2012, the age 64 and older proportion of California's VBM voters was 32.1%, up from 28.9% in 2004. Although the gap between youth VBM voters and those age 64 and older has decreased since 2004 (6 percentage points), there remains a 27 percentage point gap between the youth and 64 and older proportion of all VBM voters. In contrast, there is just a 9 percentage point gap between the youth and 64 and older proportion of the poll vote.

VBM Voters: Fewer Latinos and More Asians

Among VBM voters, Latinos are underrepresented and Asians are overrepresented compared to their proportions of California's total vote. In November 2012, Latinos made up 14.4% of VBM ballots, but 24.4% of poll voters (they are 19.5 % of California's total 13 million voters in 2012). Since 2004, Latino increases in the proportion of the poll vote have slightly outpaced increases in their share of VBM voters; 5.8 percentage points compared to 4.2 percentage points. Asians make up 9% of VBM ballot versus just over 6% of poll voters (compared to 7.5% of all California voters). Since 2004, Asians have increased their proportion of VBM voters slightly by a 1.3 percentage point, while staying consistent in their share of the poll vote during the same time period. Given the projected large increases in Latino voters over the next 30 years, if lower VBM use by Latinos (and higher poll use) continues then a strong impact could be seen on the state's overall VBM use rates.



Note: African-Americans were not examined in this analysis due to limitations in the data. See Notes.

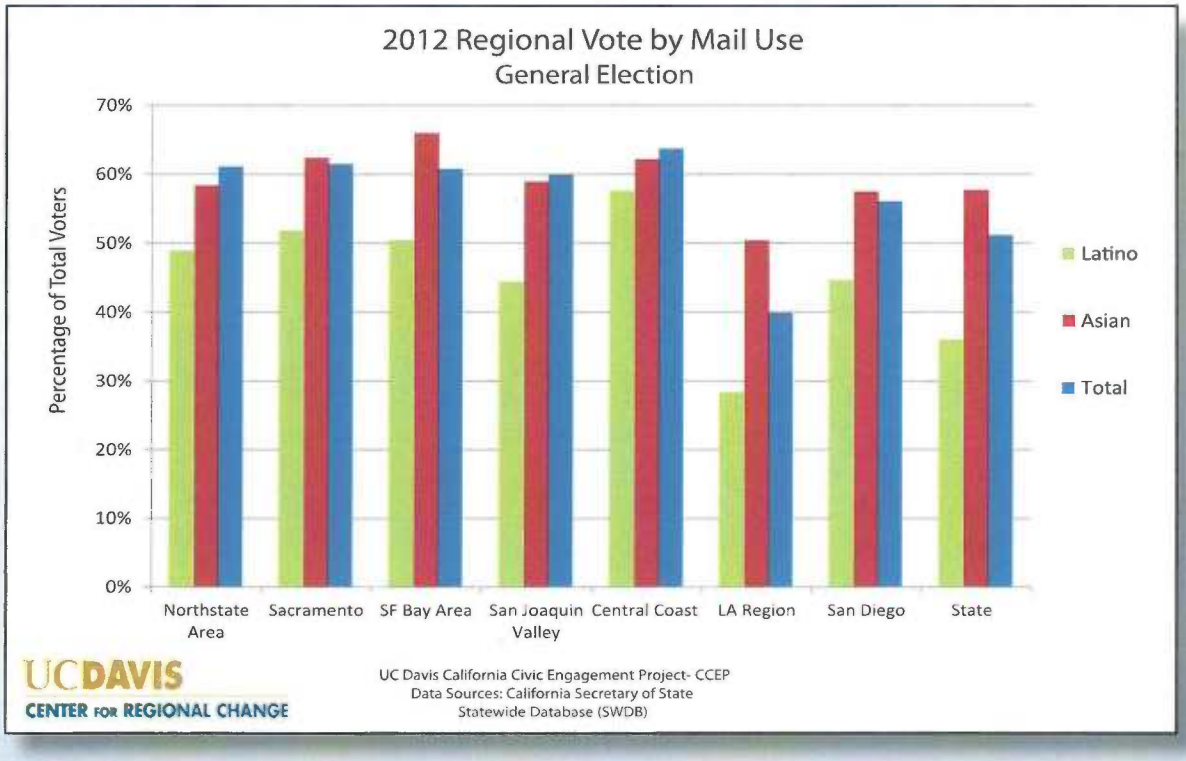
VBM Voters: Higher Proportion Democrat than Poll Voters.

In 2012, despite their somewhat lower VBM use rates than Republicans (and because of their overall greater numbers in the electorate), over 43% of VBM voters were affiliated as Democratic, 33.8% were Republican and 17.8% NPP. In contrast, 46% of poll voters were affiliated as Democratic, with 29.6% Republican and 18.8% NPP. Democratic proportions for both voter groups have remained steady since 2002. Over the last decade, Republican proportions have declined slightly more for VBMs than poll voters. No Party Preference (NPP) proportions have increased slightly for VBM compared with poll voters.

2012 Regional VBM Variation

There are large geographic differences in the use of VBM across California. In 2012, most of the state's regions actually exceeded California's overall 51% VBM use rate. Every region except Los Angeles and San Diego had 60% or higher VBM use. With a VBM use rate of only 32.9%, the Los Angeles Region, and its large population of voters, is driving California's overall VBM rate lower. Considering the significant demographic differences across California's regions, differing regional VBM use rates translate into varying impacts on the state's VBM participation by race/ethnicity and age.[4]

Greater Variation in Regional VBM use for Latinos and Asians

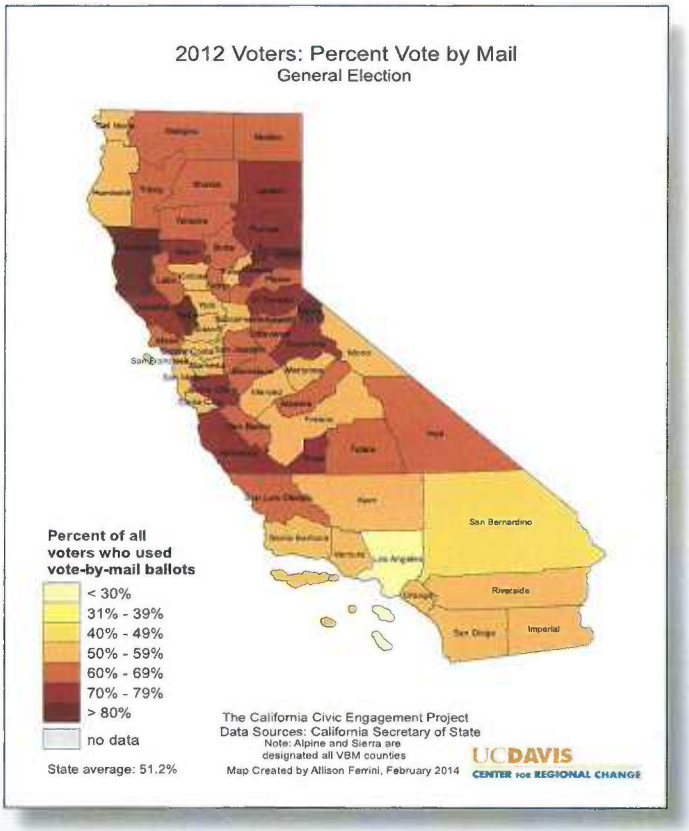


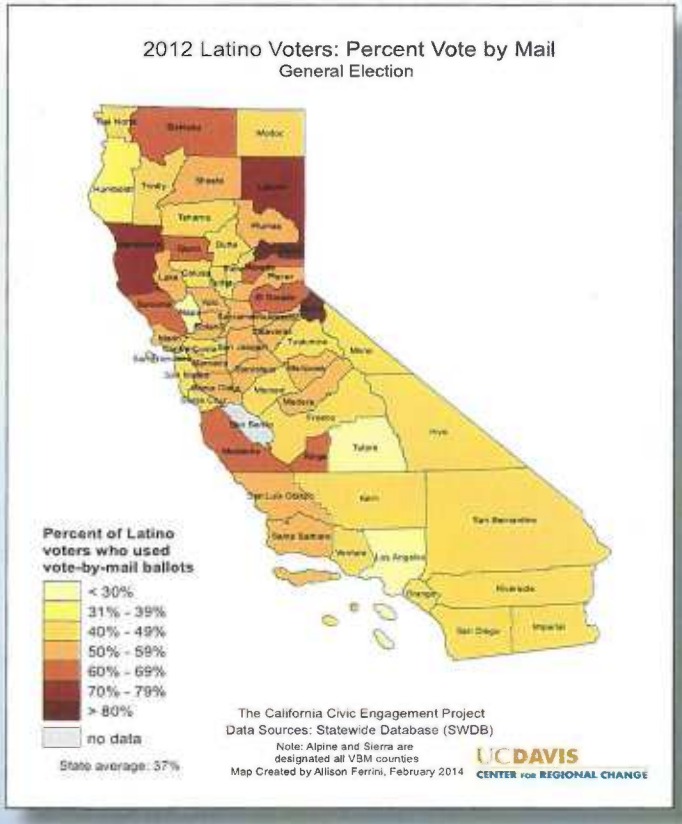
Latinos and Asians experienced greater regional variation in their VBM use than the general public, leading to wider gaps in some regions between the Latino and Asian VBM use rate and the VBM use rate of the total electorate. Further, regions with the highest regional VBM use rates varied for Latinos and Asians compared with the total voting population. For Latinos, their highest proportional use of VBM was in the Central Coast region (57.6%). The lowest regional VBM use rates for Latinos were in the San Joaquin Valley and Los Angeles Region - both high population centers for Latinos. Asians in the San Francisco Bay Area utilized VBM at the highest rate (66%) in the state and have higher use rates than the total population use in 4 out of 7 regions. At 52.2%, youth in the Sacramento region experienced the highest proportional use of VBM compared with other regions in the state. Further, within regions, VBM use can vary even more significantly - from a total use rate of 30% in Los Angeles County to nearly 90% in Napa County (Alpine and Sierra counties both have all VBM elections).

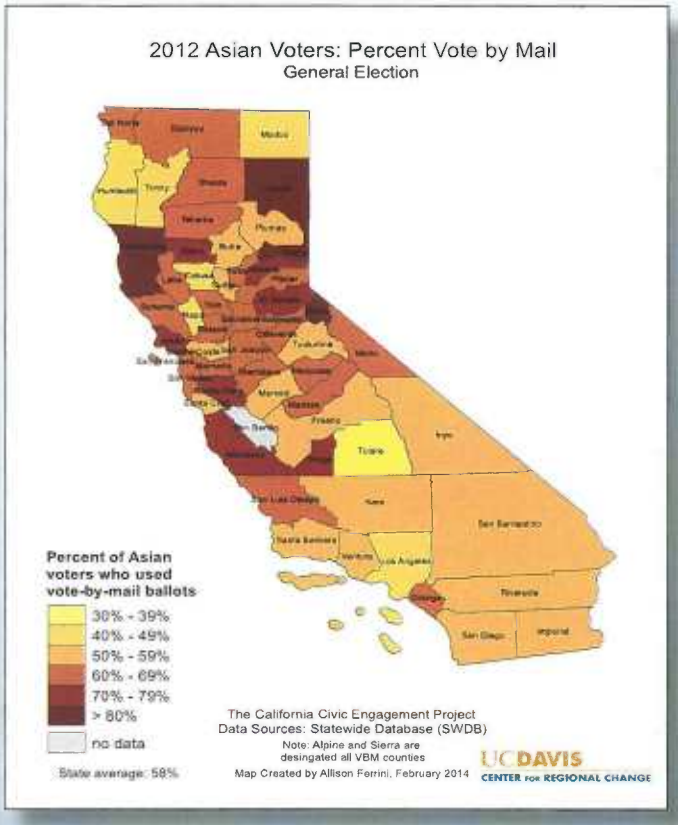
Why Do Differences in the Make-Up of VBM vs. Poll Voters Matter?

California has two different sets of voters who each have different demographic and political compositions: VBM and poll voters. Understanding variation in VBM use rates for California's electorate is important to those efforts aimed at increasing the overall participation of California's electorate. Outreach, education and services to VBM voters, or future VBM voters, need to be targeted to reflect the different group use rates. For instance, given the high use of vote-by-mail by Asians in California, we may need to further examine whether the non-English speaking segment of these voters could benefit from specific outreach when having to utilize English language VBM ballots. As discussions occur involving the possible expansion of the use of VBM ballots (including proposals to consolidate, reduce, or eliminate polling places), it will be critical to utilize current data to identify any possible disparate impacts on the electorate, particularly at a county and community level.

Please see CCEP website for detailed data tables and maps by county and region. See notes for discussion of county level data.







This research is designed and conducted as a collaboration between the Future of California Elections (FOCE) and the UC Davis California Civic Engagement Project.

About the Future of California Elections (FOCE):
The Future of California Elections (FOCE) is a collaboration between election officials, civil rights organizations and election reform advocates to examine and address the unique challenges facing the State of California's election system. FOCE was formed in late 2011 to examine and address the unique challenges facing the State of California's election system. In 2013 and beyond, FOCE will be focused on building on this foundation of consensus and success.

About the California Civic Engagement Project (CCEP):
To address the critical lack of publically accessible data to inform the public dialogue on governance in California, the UC Davis Center for Regional Change established the California Civic Engagement Project (CCEP) in 2011. Its mission is to collect and curate civic engagement data from a broad range of sources, making them a publicly available resource to all interested audiences, including public officials, advocacy groups, non-partisan organizations and communities themselves. The CCEP also supports research that explores non-traditional measures of civic engagement, particularly those that may be more likely experienced by disadvantaged or disconnected groups. The CCEP's efforts towards democratizing data and informing the growth of a diverse civically engaged population strongly supports the development of equitable and effective governance in the state.

Author: Mindy Romero — Founding Director, California Civic Engagement Project

This project is supported through a grant from The James Irvine Foundation.

Launched in 2007, the UC Davis Center for Regional Change is dedicated to producing research that informs the building of healthy, equitable, prosperous, and sustainable regions in California. To accomplish this, the CRC builds two kinds of bridges. One set is on campus between faculty and students from different disciplines and departments; the other between the campus and regions throughout the state. These bridges allow us to bring together faculty, students and communities to collaborate on innovative action research that identifies and directs resources to communities struggling with the most challenging environmental and social conditions. Visit the Center's website at http://regionalchange.ucdavis.edu.

NOTES

[1] Data for California's 2012 total VBM use rates were acquired from the California Secretary of State. See: http://www.sos.ca.gov/elections/elections_u.htm

[2] Voter data by demographic breakdown were acquired from the Statewide Database. These data are actual voter records and not representative samples. 2012 VBM data for San Benito county was unavailable and not included in our analyses. SWDB Data for Modoc, Napa, Sutter, Trinity, Tulare, and Tuolumne counties may be conservative estimates compared with published California Secretary of Data. Due to differences in data collection methods, caution should be utilized when directly comparing California Secretary of State voter data publications with SWDB data. The CCEP adjusted data estimates for Calaveras and Mariposa counties. Latinos and Asians are distinguished in the registration data from the general population by the use of Spanish and Asian surname lists which identify registrants with commonly occurring Spanish and Asian surnames. Surname matching is not reliable for white, non-Hispanic, and African-American populations, and thus, voter data is not available for these groups. Please note that historically some counties have reported forced mail ballots in these data as absentee, while other counties have allocated them to the poll vote. For more information on methodology and limitations, please see: http://swdb.berkeley.edu/d10/Creating%20CA%20Official%20Redistricting%20Database.pdf. Note: The Statewide Database's 2002-2012 voter data files posted on their website are currently mislabeled by age. SWDB's voter file data is actually calculated for the following age groups: ages 18-23, 24-33, 34-43, 44-53, 54-63 and 64+.

[3] California Civic Engagement Project's Policy Brief 6: Changing Political Tides: Demographics and The Rising California Latino Vote.

[4] Regions defined to include the following counties. Sacramento Region: Sacramento, El Dorado, Placer, Sutter, Yolo, Yuba; San Francisco Region: Alameda, Contra Costa, Marin; Napa, San Francisco, San Mateo, Santa Clara, Santa Cruz, Solano, Sonoma; LA Region: Los Angeles, Orange, Riverside, San Bernardino, Ventura; San Joaquin Valley: San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Kern, Tulare; North State: Butte, Del Norte, Lassen, Modoc, Siskiyou, Humboldt, Shasta; Central Coast: Monterey, San Benito, San Luis Obispo, Santa Barbara; San Diego: San Diego.

For more information about this research study and the California Civic Engagement Project, contact Mindy Romero, CCEP Director, at 530-665-3010 or msromero@ucdavis.edu.
Visit our website at: http://regionalchange.ucdavis.edu/projects/california-civic-engagement-project-ccep.

PPIC PUBLIC POLICY INSTITUTE OF CALIFORNIA

Expanding California's Electorate

Will Recent Reforms Increase Voter Turnout?

January 2014

Eric McGhee

with research support from Daniel Krimm

Supported with funding from the S. D. Bechtel, Jr. Foundation

HILL STREET STUDIOS/BLEND IMAGES/CORBIS

SUMMARY

Over the past 20 years, voter turnout in California has been slipping compared to other states, and this decline may be exacerbating the gap between Californians who vote and the rest of the population. The state has considered or undertaken a variety of reforms to reverse these trends.

In this report, we explore three of these reforms: a system of online voter registration, a same-day registration process, and a more relaxed deadline for submitting vote-by-mail ballots. One could argue that all of these reforms have inherent value because no eligible citizen should be prevented from voting for what amount to administrative reasons. But the administrative costs of a reform and the number of people who benefit from it matter as well.

We find that none of these reforms is likely to produce large gains in turnout but two of the three are likely to cost very little or save money.

- California implemented an online voter registration system late in the 2012 election cycle. It was immediately popular, but it probably did not bring many new voters into the electorate or significantly change the demographic makeup of new registrants. However, the initial rollout probably saved counties considerable time and money. Online registration might have a greater effect on voter registration in the future, and its cost savings make the new system worthwhile.
- California has adopted a new system of same-day registration, which will allow voters to register and cast ballots after the close of the official registration period. This system

will probably boost turnout a few percentage points. But a substantial number of people may take advantage of same-day registration, which could result in significant costs and complications for county registrars.

- Proposed reforms designed to ensure that more vote-by-mail ballots are counted by relaxing the deadline would affect only a tiny fraction of total votes cast but a large share of the ballots that are currently rejected. The cost of counting late ballots is probably minor, and the value of counting legitimate votes is great.

The online registration and vote-by-mail reforms are worth pursuing despite the small turnout benefits evident so far. And because it seems to encourage earlier registration among some voters, online registration might mitigate some of the negative effects of same-day registration on county registrars. Same-day registration, by contrast, creates an administrative burden that is quite heavy, given its modest effect on turnout. Instead, it might make sense to switch to a system of automatic registration, which would put every eligible Californian on the registration rolls and eliminate the need for the patchwork measures now in place.

In any case, the state will have to do more than remove administrative barriers if it wants to expand the size of its electorate. It will need to do aggressive outreach to communities of potential voters who are underrepresented at the polls and often overlooked in get-out-the-vote drives.

For the full report and related resources, please visit our publication page:
www.ppic.org/main/publication.asp?i=1083

Introduction

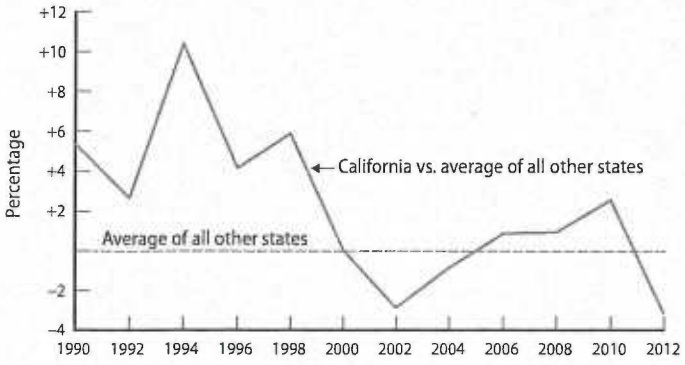
California has been at the forefront of recent efforts to expand the electorate. The state has considered or passed a number of reforms in recent years to get more people registered and increase voter turnout. These include creating an online system that makes registering to vote as easy as possible, scrapping the registration deadline so that citizens who decide to vote at the last minute are not excluded, and relaxing the deadline for vote-by-mail (VBM) ballots so that fewer go uncounted because they are late.

There is ample evidence that California has a turnout problem. Among the population of citizens who are eligible to vote, the share that casts a ballot has been declining in California compared to other states. Figure 1 shows that in the 1990s, California's turnout was consistently higher than in the rest of the country, especially in midterm elections when the presidential contest was not on the ballot. This advantage has faded in recent years, and now California tends to match the national average or fall behind.[1]

There is also evidence that California has an "exclusive electorate," dominated by older, whiter, wealthier Californians (Baldassare 2006). The decline in turnout matters because it may be widening the rift between this exclusive electorate and those who do not (or cannot) vote.

In this report, we evaluate three important voting administration reforms that have been adopted or proposed in recent years. First, we look at the state's promising new online registration system and evaluate its effect on the 2012 election. We then examine the likely effect of the state's new same-day registration law. And, finally, we look at ways to improve the state's VBM system, usually by ensuring that fewer voters miss out on the franchise because their ballots arrive too late.

Figure 1. California's voter turnout is declining more than in other states



SOURCE: U.S. Census Current Population Survey, November Supplement, 1990–2012.

There is evidence that California has an "exclusive electorate," dominated by older, whiter, wealthier Californians.

To provide a comprehensive overall picture of the value of each reform, we consider both its effect on turnout and its potential to increase efficiency or impose additional burdens or costs on election administration. We conclude by outlining the policy implications of this analysis.

Online Registration

California's Internet-only voter registration process was established by Senate Bill (SB) 397, which was signed into law in October 2011 and rolled out on September 19, 2012. The system allows users to enter voter registration information and click a button to complete the process. It replaces the registration form that had long been available online but that had to be printed, signed, and mailed in.

The new system was instantly popular: more than half of all new registrants in the last month of the 2012 fall registration period used it, exceeding even the most optimistic expectations. Moreover, several studies in California and elsewhere have concluded that online registration has brought new voters into the electorate and that these new voters were younger, poorer, and more likely to belong to racial or ethnic minority groups (García Bedolla and Vélez 2013; Romero 2013a, 2013b).

In purely administrative terms, there is little doubt that online registration is more efficient and vastly cheaper than the old paper system. There has not yet been a comprehensive study of the cost savings in California, but an important study in Arizona found that the cost to process a traditional paper form was about 28 times the cost of an online registration form (Barreto et al. 2010). Moreover, an online system significantly reduces the risk of error by computerizing the entire registration process, eliminating steps in the middle—such as inputting information from mailed-in forms—that led to errors and logistical problems. As long as the old system is available for those who do not have easy computer access, the state should move aggressively to get as many people as possible to use the new system.

Voting online

Given the popularity of online voter registration in California, what are the prospects for casting ballots online? In fact, there are two bills currently under consideration in the Assembly that would permit online voting in specific circumstances: Assembly Bill (AB) 19 would allow counties to conduct Internet voting pilot programs in local elections, and AB 1360 would allow online voting in homeowners' association elections. Neither bill had passed out of the Legislature by the time this report went to press.

Internet voting raises important security concerns that are difficult to address. Online transactions are not reliably secure, and private firms that rely on such transactions lose billions of dollars annually to fraud (Paget 2009). Since these firms are mostly concerned about profitability, they can balance the costs of preventing fraud against the costs of reimbursing the losses of individual customers. Election administrators, by contrast, must ensure the integrity of the voting process.

Privacy is another concern. Both financial transactions and voting require authentication of identity, but voting requires a secret ballot after that initial confirmation. It would be impossible to replace a lost vote in the same way as one would replace a lost dollar.

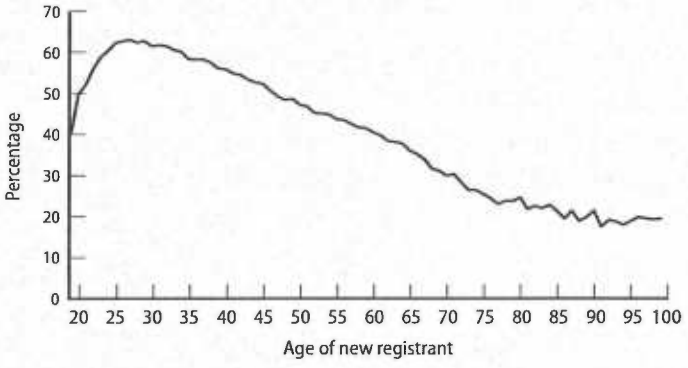
Since the barriers to Internet voting tend to be structural rather than technical, successful implementation would probably require the state to adopt standards of security and privacy that match those of Internet commerce more closely, a shift in values that many might resist making.

Effect on Voter Participation

Administrative benefits aside, did online registration change the size or composition of the registered voter population? There were several differences between citizens who registered online and the population that registered the traditional way during the same period. Online registrants were somewhat less likely to be Latino (22% versus 25%), slightly more likely to be Asian American (9% versus 8%), and somewhat more likely to end up voting on election day (84% versus 78%). They were also younger, with an average age of 35, compared to age 39 for traditional registrants—and adults in their mid-20s were almost three times more likely than senior citizens to register online (Figure 2).[2] But does this mean that online registration drew more or different people into the electorate? Or would the voters who registered online have registered anyway, using the traditional process?[3]

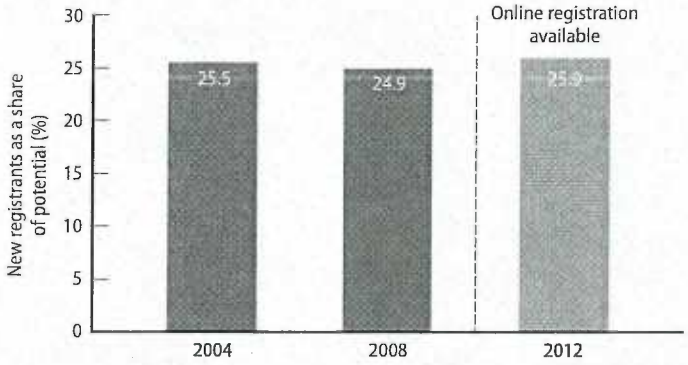
Figure 3 shows the number of new or changed registrations during the period between the final two registration reports—60 and 15 days before the election—in 2004, 2008, and 2012. To account for population growth between election years, the numbers are presented as a share of the total unregistered but eligible population—adults legally able to register who had not yet done so as of 60 days before the election. The results make clear that the surge in registrations in 2012 was consistent with previous presi-

Figure 2. Younger people have been far more likely than older people to register online



SOURCE: Political Data, Inc.

Figure 3. Online registration did not produce a significant surge in new registrants



SOURCES: California Secretary of State, Political Data, Inc.

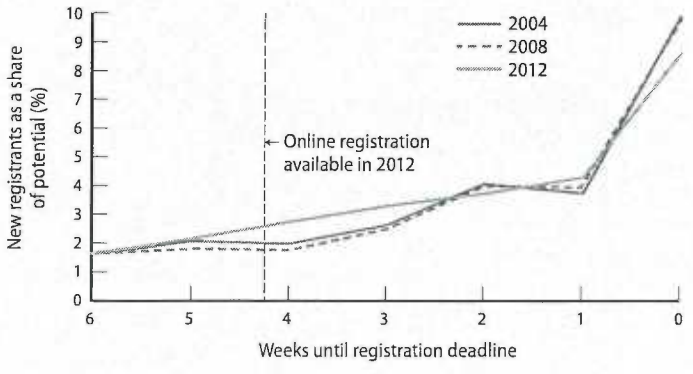
dential elections. Registration applications were submitted by 25.9 percent of the potential new voters—no more than a percentage point more than in 2004 (25.5%) and 2008 (24.9%).[4] The results are similar if total registration is considered as a share of the eligible population.[5]

When the numbers in Figure 3 are broken down by week, the pattern of registrants in 2004 and 2008 is strikingly similar: registration is slow at first, then picks up speed, and there are huge registration numbers in the final few days. By contrast, in 2012 registration began to increase much earlier, right after online registration became available, and then slowed down (Figure 4). In other words, the online registration system may have encouraged voters who were planning to register anyway to do so earlier in the cycle, without bringing many new voters into the electorate.

Did online registrants turn out in greater numbers? On the one hand, it seems that online registrants were more likely to vote. But this, too, could be a matter of which people availed themselves of the new system: indeed, the voting rate for registrants who signed up just before online registration became available was virtually identical to the rate just after.[6] Also, the presidential conventions seem to have played an important role: those who registered after the conventions were about 10 percentage points more likely to vote than those who registered before, presumably because their interest was piqued by media coverage.

It is possible that there was something unusual about the 2012 election that depressed registration rates overall or among key subgoups. Might registration have been *even lower* without an online registration option? To answer this question, we can compare registration in California and other online registration states to those that have not adopted the reform, and do so across multiple election years, not just 2012. Did the online registration states see a gain after adopting the reform? We conducted a separate analysis of registration rates over time in all 50 states, paying special attention to changes when states have adopted online registration. Consistent with the analysis so far, registration as a share of the eligible population in other states has not changed on average in response to the adoption of online registration.[7]

Figure 4. Online registration shifted registrations earlier in the cycle without increasing the total number of registrants



SOURCE: Political Data, Inc.

Effect on the Composition of the Electorate

Did the online system increase registration in key subgroups? The 2012 registration rates for these groups did not change much: the Latino share of registrants was up about a half a percentage point from 2008, whereas the shares of both young people (ages 18 to 24) and Asian Americans were down about a half a percentage point.[8] But these numbers do not settle the matter; there may have been something unusual about 2012 that would have depressed registration rates for all these groups if online registration had not been available.

One way to get at this question is to see if there was a change in the type of person who registered after online registration went live. Here, we do see signs of some effect. Figure 5 shows that the share of both young adult and Asian American registrants began climbing right after the rollout of online registration.

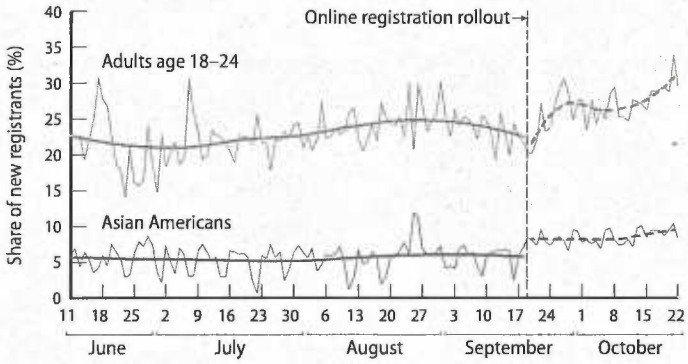
To attribute all of this increase in young people to the new registration system, we would have to believe that without the online option, a smaller share of 18- to 24-year-olds would have registered in 2012 than in any other primary or general election since 2002—despite constituting about the same or a slightly larger share of the pool of eligible voters.[9] Thus, it seems likely that—as with registrants overall—young voters who would have registered anyway decided to sign up earlier in the cycle.[10]

The same is true for Asian Americans, who constituted about 5.5 percent of new registrants before online registration and about 8.5 percent after.[11] It is hard to believe that without the online option, Asian Americans would have remained 5.5 percent of new registrants through the close of registration—not only would this have been a lower share than in any election since 2002, but the share of Asian Americans eligible to vote has grown over the past decade. Nonetheless, online registration probably accounted for some of the 3 percent increase in Asian American registration.[12]

By contrast, Latino registration actually *fell* slightly just after the online system was introduced. This does not mean that online registration discouraged Latinos from participating but that the surge in non-Latino registration was not matched by Latinos. And, as Figure 6 shows, the share of Latino registration rebounded by the end of the cycle.[13]

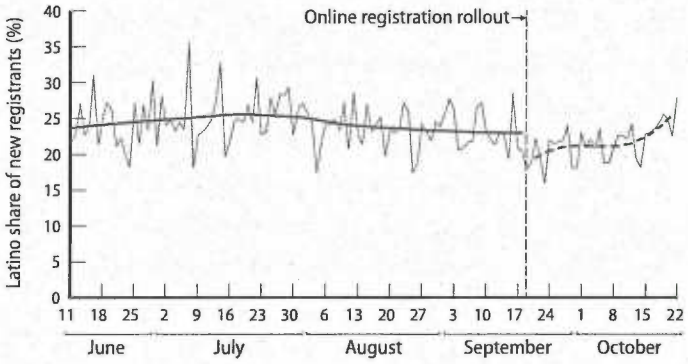
Because young people, Latinos, and Asian Americans tend to belong to the Democratic Party, some predicted that online registration would increase the number of Democrats. Did online registration help one or the other major party? Figure 7 shows the share of new voters who registered as Democrats and Republicans in the weeks leading up to election day. The trend lines for party registration are identical before and after the online option

Figure 5. Young people and Asian Americans registered at higher rates after the rollout of online registration



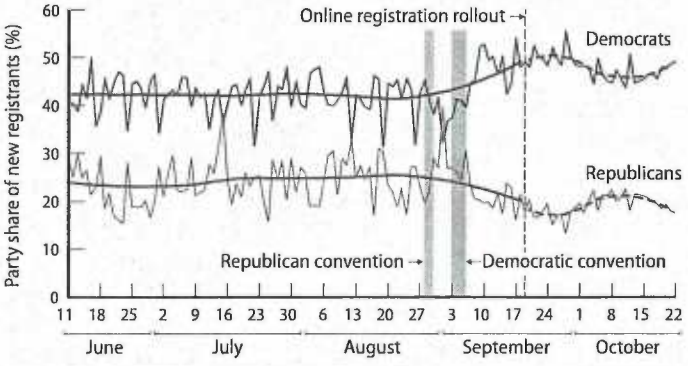
SOURCE: Political Data, Inc.

Figure 6. The online option did not significantly improve Latino registration



SOURCE: Political Data, Inc.

Figure 7. There was no clear sign of a shift in party affiliation after online registration became available



SOURCE: Political Data, Inc.

became available, so there is no clear sign here of any effect. The real effect appears to have come from the presidential conventions, especially the Democratic ones. After the Democratic convention, the share of registrants who chose the Democratic Party was almost 10 percentage points higher—and the Republican Party share 5 percentage points lower—than in the weeks leading up to the conventions. Again, it is not clear how many of these voters would have registered as they did anyway, but the conventions do appear to have affected decisions about timing, if nothing else.

Online registration seems to have altered the *dynamics* more than the *level* of registration. More Californians registered earlier in the cycle and fewer registered late, resulting in a very small overall increase.

A Small Effect on Total Registration

In short, online registration seems to have altered the *dynamics* more than the *level* of registration. More Californians registered earlier in the cycle and fewer registered late, resulting in a very small overall increase. Other states that have adopted similar reforms have seen only modest increases in registration rates, or none at all, including among key subgroups.

It is far too soon to discount the effect of online registration on turnout. The system was rolled out quite late in the election cycle, slightly more than a month before the registration deadline. It is possible that as the online option becomes known to more people, and once parties and interest groups have time to experiment with different mobilization approaches, there will be more gains in voter participation.

Is online registration the right tool for the job?

Should we expect an online form to be an effective way to increase registration? Californians who are eligible to vote but have not registered are less educated and more heavily Latino—groups that help form the "digital divide" between those who use the Internet and those who do not (Baldassare et al. 2013). Thus, the very people who could benefit most from an online form might not have easy access to it.

It is true that those who are not registered to vote are less likely to use the Internet. According to the most recent PPIC Statewide Survey on Internet use, about 17 percent of unregistered adult citizens say that they do not use the Internet, compared to 9 percent of registered adults (Baldassare et al. 2013).[14] The gap is somewhat larger when framed in terms of convenience and frequency: unregistered citizens are less likely than registered citizens to have broadband access at home (62% versus 77%) and are less likely to go online from home at least once a day (57% versus 67%). And, because young people and Asian Americans are among the most frequent users of the Internet, it is perhaps no coincidence that there are signs of an online registration effect for these groups.

Nonetheless, these numbers suggest that most unregistered Californians have regular access to the Internet. Moreover, mobile Internet devices such as Android phones and iPads are equally common among unregistered and registered citizens: two-thirds of each group have access of this kind. Even among those who are both unregistered and have no Internet access at home, a quarter have mobile access.

Overall, most unregistered citizens have regular access to the Internet and could make use of the online registration system.

Same-Day Registration

In September 2012, the governor signed AB 1436, which establishes a system of "conditional" voter registration in California. This system allows residents who miss the registration deadline (15 days before the election) to both register and vote on any of the remaining days, including election day itself. Conditional registrants will have to register and vote at their county registrar's office for their ballots to count.[15] To minimize the potential for fraud, conditional registration will not be available until the California

secretary of state finishes creating a voter registration database that complies with the Federal Help America Vote Act—the database will not be ready before 2016.[16] The goal of this reform, as described in the analysis of the bill, is to make it easier to vote and so increase voter turnout overall.

Many states have a "same day" registration process similar to conditional registration, but they close off access on or just before election day. Other states take the opposite approach: they have "election day registration" (EDR)—that is, same-day registration on election day—but forbid registration in the days and weeks before. In permitting both same-day registration and EDR, California will be adopting one of the most permissive registration systems in the country.

This significant reform generates two important questions. Will conditional registration increase voter turnout in California, as its authors intended? And how many new voters might election administrators need to process close to or on election day?

In permitting both same-day registration and EDR, California will be adopting one of the most permissive registration systems in the country.

Does same-day registration increase the risk of voter fraud?

Same-day registration gives election administrators less time to verify voter eligibility. Does that make it harder to prevent ineligible voters from participating or eligible voters from casting multiple ballots?

Empirical studies produce very little evidence of voter fraud; there are few intentional attempts, and most of those are prevented by administrative review processes already in place to detect and correct inadvertent errors. Qualification requirements for registration generally exceed those for voting, even where there are voter ID laws, and this applies to same-day registration the same as any other voter registration process. Verification of registration information occurs in due course even for same-day registrants, and intentional violators are subject to criminal prosecution.

Comprehensive information on the incidence of voter fraud is not available from a single source. One study of six long-term EDR states (Idaho, Maine, Minnesota, New Hampshire, Wisconsin, and Wyoming) found news reports of 10 discrete incidents of voter fraud with merit between January 1999 and February 2005 and five federal convictions for felon voting between 2002 and 2005. An additional survey of 36 out of 252 local jurisdictions in 2004 and 2005 yielded seven cases that were sent warnings but not prosecuted (Minnite 2007). This is similar to the low levels of voter fraud found in non-EDR states overall.

However, proper safeguards that apply to all voter registration should be maintained for EDR to prevent problems in the future. Such a system of checks may be somewhat easier to maintain under the California system, since "conditional" registration will be conducted by experienced employees of the county registrar and not volunteer poll workers.

Will It Increase Voter Turnout?

To assess same-day registration's potential effect on turnout, we focus on EDR states—the ones that currently allow voters to register and vote on election day—and set aside those (such as Ohio) that cut off same-day registration several days before. Since the excitement of election season is highest on election day itself, allowing same-day registration on that day is likely to have a larger effect.

Early studies of EDR suggested a sometimes notable effect on turnout. The effects ranged between 3 and 6 percentage points, with extrapolated predictions of up to 9 percentage points for a state like California (Alvarez and Ansolabehere 2002). Many of these studies also often argued for an especially sizable gain in key demographic subgroups such as less-educated adults, young adults, racial and ethnic minorities, and newly arrived residents.

These initial findings have been challenged in recent years by research that tests causal links.[17] In these newer studies, the maximum estimated effect falls at the low end of the older range of results, topping out at about 4 percentage points for a state with a 15-day closing date (such as Cali-

fornia), and resulting in an apparent *decline* in turnout in some cases (Brians and Grofman 2001; Hanmer 2009; Knee and Green 2011; Keele and Minozzi 2013). The largest effects are in Minnesota and Wisconsin, which adopted the reform in the 1970s and enjoy the highest level of turnout among states; the effects are much smaller in later adopters.[18]

The analysis in this report suggests results on the lower end of this range (Table 1), with a slight decline in turnout on average for a state shifting from a 15-day close to EDR.[19] Since there is no clear reason for EDR to discourage people from voting, it seems reasonable to conclude that the reform has done little or nothing to boost turnout in most of the states that adopted it. The findings were similar for key subgroups, including the young, those who recently moved, and those without a high school diploma.[20]

Are these findings overly optimistic, given that election day registrants in most EDR states are not required to go to the county registrar but can register and vote at their polling places? The California EDR law allows counties to set up satellite offices for EDR registration, and some care could be taken to place satellite offices in areas with high numbers of potential new registrants (such as university or community college campuses). But for the average EDR voter, these offices will likely be farther away than a local polling place. Moreover, many counties may not want to take the trouble to ensure that satellite offices have the full range of ballots in all languages.

In its use of county registrars, California's new system closely resembles Montana's EDR process, which was adopted in 2005. A comparison of turnout before and after Montana implemented EDR gives results ranging from virtually no effect on turnout to a more noticeable increase of about 3.9 percent. Thus, it seems unlikely that this aspect of the Montana reform had much effect on EDR. In fact, Iowa, which adopted EDR about the same time and is similar to Montana in many other ways, saw similar results from EDR despite allowing registration at the polling place.[21]

Overall, then, the average effect of election day registration ranges from nothing to about a 4 percentage point increase in voter participation. Although larger effects are certainly possible, one can point to evidence of smaller effects as well.

However, there is an important difference between California and other EDR states: even the most diverse of these other states are far more racially and ethnically homogeneous than California. That makes it impossible to evaluate the effect of EDR on racial and ethnic subgroups. We have offered estimates of EDR's effect on groups that might over-

Table 1. Election day registration has modest effects on turnout

	Data source	
	U.S. Census Current Population Survey (public opinion poll)	Election returns
Average effect nationwide	−0.4%	−0.3%
Effect on . . .		
Those with no high school diploma	−1.9%	–
Those ages 18–24	+2.7%	–
Those who moved < 6 months ago	+3.4%	–
Effect in . . .		
Iowa	+1.1%	−0.2%
Montana	+0.5%	+3.9%

SOURCE: Author's calculations.

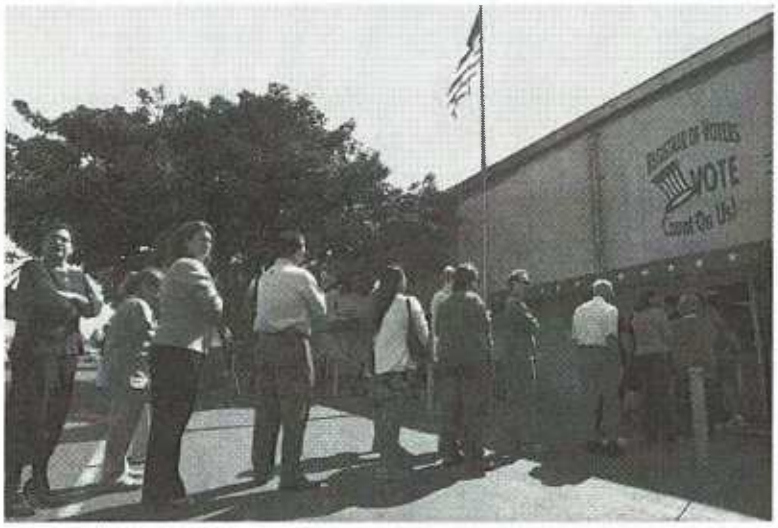
NOTE: With the exception of the estimates for Iowa and Montana, the models include the date for the close of registration, and the predictions are calculated assuming a shift from a 15-day close to an EDR system, as would be true for California.

lap with racial and ethnic minorities in California—such as the less educated, the young, and those who recently moved. But, in a sense, California—with its size and diversity—is breaking new ground in adopting such an aggressive reform, and projections should be tempered accordingly.

Will There Be a Late Surge?

Even if EDR does not expand the electorate, will more voters decide to register on or close to election day? The analysis that accompanied AB 1436 suggested that the tide of late registrants could be substantial—as many as 30,000 in Los Angeles County alone. Although these voters could certainly register at any point during the 14 days before the election, the greatest surge is likely to come on election day, creating a potentially significant administrative challenge. County registrars, who will have to cope with this surge with limited resources, are understandably concerned about how large it is likely to be.

Table 2 shows the share of all voters casting ballots who registered after the official close of the registration period in each of the EDR states. Many states do not report regularly on their EDR voters, so there is a lot of missing information, but it is possible to make a few generalizations. First, the use of EDR varies greatly from state to state. In Iowa and Montana, no more than 4 percent of voters used EDR, compared to 20 percent or more in some other states. Some of this variation may reflect differing reporting procedures and definitions.[22] These EDR voters are not necessarily new registrants: roughly half or more of the election day registrants who could be identified were already on the books but had changed addresses. However, these EDR users still take up administrative time and resources.



MIKE BLAKE/REUTERS/CORBIS

Same-day registration could result in modest increases in turnout but could also place a burden on county registrars.

One analysis of same-day registration suggested that the tide of late registrants could be substantial—as many as 30,000 in Los Angeles County alone.

In states for which we have data from both presidential and midterm elections, use of the system has almost always increased in presidential years, even when considered as a share of total turnout. Thus, EDR may place a proportionately larger burden on county registrars in high-profile elections.

What do the experiences in other states imply for California? The smallest share in Table 2 (3% in Iowa in 2008) would have translated to approximately 400,000 EDR forms in California in 2012, ranging from a low of 20 in Alpine County to a high of roughly 97,000 in Los Angeles. Note that even the lower-bound estimate for Los Angeles County is more than three times as large as the estimate in the AB 1436 analysis. If late registrations in California had matched the *highest* rate in Table 2 (21% in Minnesota in 2004), there would have been 680,000 EDR applications in Los Angeles County alone—upward of 100,000 for each branch office of that county's registrar, assuming that the offices could be set up to handle such applications.

Some mitigating factors might ease the burden. Because EDR's estimated effect on turnout is modest, the total number of applications will likely be on par with previous election cycles. Thus, EDR will probably shift the work-

Table 2. Election day registration states often have large numbers of late registrants

Year	Iowa	Idaho	Maine	Minnesota	Montana	New Hampshire	Wisconsin	Wyoming
2000		17%		19%		11%	16%	
2002		12%		15%		7%	7%	
2004		20%		21%		14%	15%	
2006		12%		13%		6%	19%	
2008	3%	18%	7%	19%	4%	11%	15%	16%
2010		9%		11%				
2012	4%	18%	8%	18%	4%	14%	11%	

SOURCES: Various Secretaries of State, Federal Election Assistance Commission (2008, 2010, 2012).

NOTE: Cell entries are the share of all voters in each state and year who registered for the first time or changed registration after the close of the official registration period, meaning that they took advantage of the election day registration law.

load of processing these applications to later in the cycle without significantly increasing it. Moreover, California's online registration system may lessen this burden: it seems to have the opposite effect of EDR, encouraging voters to register earlier than they had in previous election cycles.[23]

It seems reasonable to assume that EDR registration in California will not match the usage levels of states that allow EDR at local polling places. Moreover, there is no guarantee that the numbers will match even those of Montana, which also requires that EDR voters go to county registrars. But given the size of even the lower estimates, it would make sense for registrars to be prepared for a large surge.

On balance, the modest potential effect of same-day registration on turnout does not seem worth the cost of processing late registrations. Since the system is now law and seems unlikely to be repealed, preparing for the change is likely the best short-term solution. In the conclusion, we touch on longer-term reforms that might alleviate the problem.

Improving the Vote-by-Mail Process

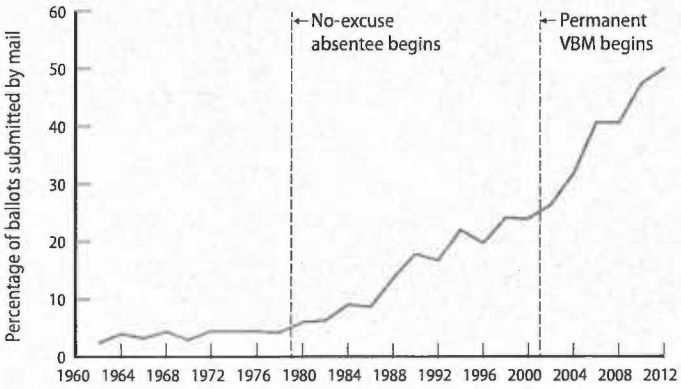
California adopted "absentee" voting in 1923 so that "any duly registered voter, who, by reason of his [sic] occupation is regularly required to travel about the state" could cast a ballot by mail (California Statutes of 1923, Chapter 283). In 1978, California was the first state in the nation to permit "no excuse" absentee voting (California Statutes of 1978, Chapter 77), and in 2001 the state created a "permanent absentee" option (California Statutes of 2001, Chapter 922), making it as easy to vote by mail as to vote in person. Since the permanent VBM option was introduced, its popularity has skyrocketed: a majority of ballots are now cast by mail (Figure 8).

VBM may be more convenient than voting at a polling place, but it complicates the process.

VBM may be more convenient than voting at a polling place, but it complicates the process.[24] Current law requires that VBM ballots arrive on or before election day. Unless voters decide to drop off ballots at their polling places on election day, they have to rely on the U.S. Postal Service (USPS) to deliver their votes on time.

Senator Lou Correa has introduced a bill (SB 29) that would address this issue. This reform would consider VBM ballots valid if they are postmarked by election day and arrive by the third day after the election.

Figure 8. The vote-by-mail option has exploded in popularity



SOURCE: California Secretary of State.

Potential Effect

Before we can assess the effect of this legislation, we need to determine the scope of the problem. Counties do not consistently gather data on late ballots, but we analyzed data from Political Data, Inc., and the California Association of Clerks and Elected Officials (CACEO) that cover 31 counties for the 2012 election. This accounts for two-thirds of all VBM ballots that year. Because these late ballot totals are not always broken down by their day of arrival, they are likely to generate high estimates of SB 29's potential effect.

Table 3 makes clear that late ballots are extremely unusual—they rarely constitute more than a half a percent of all VBM ballots cast. But lateness accounts for at least one of every five uncounted VBM ballots in most of the counties listed here. There is no reason to think that the ballots were fraudulent, which makes their rejection akin to disenfranchisement. And, in a close election, even these small numbers could make a big difference.[25]

For 24 of these 31 counties, the CACEO has also provided information about the lateness of the ballots and whether they had valid postmarks.[26] According to those data, ballots later than three days after the election accounted for about 4 percent of all late ballots across all 24 counties and accounted for more than 15 percent of such ballots in only two of the 24. So a three-day window would probably allow the vast majority of the late ballots to be counted. Some ballots did not have valid postmarks, making it difficult to know whether they were cast on time. The current version of SB 29 allows those ballots to be counted if the date that accompanies the voter's signature on the envelope falls on or before election day. Such ballots account for 12 percent of all late VBM ballots arriving within the three-day window in these 24 counties, with only two reaching as high as one-third.[27]

Are some groups of voters hurt more by late ballots than others? Table 4 presents the results of a regression analysis of how well a variety of voter characteristics correlated with submitting a late VBM ballot in the 2012 general

Table 3. Late ballots are extremely rare but constitute a large share of those that go uncounted

Total late ballots statewide	18,064
Share of VBM ballots cast	0.40%
Share of uncounted ballots	47.00%

SOURCES: Political Data, Inc., CACEO (total late and VBM ballots), California Secretary of State (total uncounted VBM ballots by county).

NOTES: Political Data, Inc. provided data for Calaveras, Madera, Mariposa, San Francisco, Sierra, Sonoma, and Tehama counties. CACEO provided data for Amador, Fresno, Humboldt, Inyo, Los Angeles, Mono, Orange, Plumas, Sacramento, San Benito, San Diego, Santa Clara, and Siskiyou counties. Data for the remaining counties were available from both sources. Where the sources did not match, the higher number is reported.

Table 4. Some groups are slightly more likely to submit late ballots

	Likelihood of late ballot
New registrant since 2010	No clear difference
Voted in 2010	Lower by 0.36%
Ages 18–24	Higher by 0.86%
Democrat	Higher by 0.12%
Independent	Higher by 0.22%
Latino	No clear difference
Asian American/Pacific Islander	Higher by 0.13%

SOURCE: Political Data, Inc.

NOTES: Each number represents the change in the predicted percentage of people who would submit a late ballot for those in each group compared to the rest of the VBM population. Likelihood is calculated from a logit regression of late ballot status on the identified variables, with fixed effects for counties. The sample was limited to VBM voters who returned a ballot in the 17 counties identified in Table B11 of Technical Appendix B. "No clear difference" refers to effects of less than 0.10%.

election for the 17 counties for which we have data for individual voters. Each number is the separate difference in likelihood that is attributable to that group, independent of all the other characteristics listed in the table. The largest differences generally have to do with a lack of experience with the act of voting. Voters young enough to have limited voting experience are more likely to submit a ballot late, whereas those who voted in 2010 are less likely. Being a new registrant makes no difference independent of being young, but many of these "new" registrants might have been registered somewhere else before the 2012 election.

Relying on the U.S. Postal Service

Most VBM voters count on the USPS to get the ballot to election officials on time. The USPS has a strong delivery record, but some mail does get delayed or lost. If a delivery delay prevents a ballot from arriving on time, then it can be said that the USPS has unintentionally disenfranchised a voter.

This is not an idle concern. The use of traditional mail has plummeted even as the popularity of VBM has rapidly increased. This has forced the USPS to cut costs; it has laid off employees and closed local post offices, and it is contemplating ending Saturday delivery. It has also been closing many of its processing and distribution centers (P&DCs). P&DCs are hidden to most postal customers. They are not points of contact for the general public but large-scale facilities that sort the mail and direct it to its destination. These P&DC closures have been quite significant: 39 percent nationwide were closed between 2006 and the present, including seven in California between 2010 and 2012 alone. Still more closures are planned. After a center is closed, the mail it used to process is handled by a nearby existing facility. Because of the greater distance and the potential for slower processing in the newly consolidated facilities, there is always the chance that voters whose mail is consolidated will see slower delivery times. The average voter is not likely to know whether his or her P&DC has been closed.

Can we attribute any late ballots to the USPS consolidation process? To assess this possibility, we factored P&DC consolidation into the regression analysis in Table 4.[28] This analysis suggests that VBM voters in consolidated zip codes were slightly *less* likely to have a late ballot in 2012, at least in those counties for which we have late ballot information.[29]

Late ballots are not a source of concern for overall turnout. But because they constitute a significant share of uncounted ballots, counting them would significantly reduce the number of disenfranchised voters.

In sum, late ballots are not a source of concern for overall turnout. But because they constitute a significant share of uncounted ballots, SB 29 would significantly reduce the number of disenfranchised voters. Moreover, because the number of ballots involved is small, counting them would not impose much additional administrative burden, especially in counties that already have an extensive post-election validation process.

There may be no reason to worry that USPS cost-cutting will result in more late ballots. But the USPS is not

JOHN GRESS/CORBIS

The closing and consolidation of USPS processing and distribution centers could affect vote-by-mail ballots.

done with the cuts, and more radical changes could be in store. Relaxing the deadline for VBM ballots seems like a modest way to forestall any adverse effects and make sure that all valid votes are counted.

Policy Implications

None of the reforms examined in this report is likely to have a large effect on voter turnout. Online registration may have brought a few more people into the system in 2012, but it mostly encouraged voters to register earlier than they might have otherwise. At the same time, it is much cheaper and more accurate than the paper system, so its administrative benefits are potentially substantial. Election day registration is similar in that its effect on voter turnout will probably be no more than a few percentage points (although for California that would still mean hundreds of thousands of new voters). But the administrative effect might be large. Certainly, county registrars ought to prepare for a deluge of late registrants under the new system, since the numbers involved may be larger than even some existing estimates that seem large already. Online registration might offset this surge somewhat by encouraging voters to register earlier in the cycle, but the possibility for this effect in future years is uncertain enough that it would be prudent not to count on it.

To increase turnout substantially, mobilization efforts will need to target hard-to-reach citizens who probably would not vote at the same rate as those who are currently registered.

Finally, efforts to deal with late VBM ballots will affect only a tiny fraction of the ballots cast, and there is no sign that cutbacks at the USPS will create problems for the VBM system in the future. But the administrative costs seem small enough—and the effect on the problem of late ballots large enough—to make the reform worth pursuing.

Given that the removal of virtually all administrative barriers helps only at the margins, the state should shift its focus to motivating Californians to take advantage of the systems that have been put into place. In short, we should shift from *facilitating* voters to *mobilizing* them.[30]

A number of options could be pursued. First, online registration should be viewed not as an end in itself but as a first step toward a different system of mobilization. Compared to other forms of communication, the Internet is highly scalable: it costs only slightly more to reach 10,000 people than it does to reach 10. And because the state's new online registration system is completely Internet-based, it can be integrated seamlessly with any electronic appeal to register and vote.[31] This can allow a great deal of experimentation with different forms of outreach at relatively low cost. Moreover, the secretary of state can take further steps to make the new system easier to use with mobile Internet devices.

If online registration can make electronic outreach more effective in getting voters registered, the potential gains could be quite significant. Only two (Colorado and Nevada) of the 12 states that have adopted online registration have been in play in a presidential election when the system was in place. A close presidential race is the circumstance most likely to make a mobilization effort strong and effective, so as more states adopt the reform, it may yield greater results.

Mobilization efforts need to reach beyond the "low-hanging fruit" of those who are likely to register and vote but have not yet done so. To increase turnout substantially, these efforts will need to target hard-to-reach citizens who probably would not vote at the same rate as those who are currently registered. But the turnout rate among these unregistered citizens is currently zero, so even an extremely low turnout rate would be an improvement.

In fact, it would probably make sense to think of both online registration and same-day registration as way stations en route to a system that automatically registers every

GETTY IMAGES

California should consider reforms that target and mobilize hard-to-reach voters.

eligible California citizen. California does have a "motor voter" system in place so that citizens can register when they get drivers licenses or engage with government in other ways. But this system is not as simple or well promoted as it was intended to be.[32] Recent legislation (SB 35) by Senator Alex Padilla that was signed into law would improve many aspects of this system and expand it to more government offices. But citizens must still actively choose to register.

The system could instead be made "opt out," meaning that voters would automatically be registered based on information provided to various government agencies. To opt out, they would need to remove their names from the registration rolls.[33] Automatic registration would not force residents to divulge any more information to the government than they had already revealed for other purposes; it would simply use the information already provided to determine voter eligibility. Even if this approach were to register no more citizens than election day registration, it would likely result in a more even distribution of new

The turnout rate among unregistered citizens is currently zero, so even an extremely low turnout rate would be an improvement.

registrants throughout the election cycle and save county registrars the challenge of large pre-election surges.

What might be the limitations of such a reform? Some voters might not want to register for philosophical or administrative reasons,[34] so it would be important to make the choice to opt out very clear. There might also be costs that offset the administrative gains—for example, the state would need to send election materials to a much larger group of registered voters. There would need to be further cost estimates before the system could be considered a viable option.

An automatic registration system would not necessarily increase turnout much by itself.[35] Election day registration, which in most states is only slightly more burdensome on the average voter, appears to have had only a modest effect in those states. It would have to be coupled with aggressive outreach to bring new voters to the polls. More generally, voter turnout cannot be improved solely by administrative means. Increasing and diversifying voter participation is an ongoing process of motivating more Californians to exercise their right to vote. ●

Technical appendices to this report are available on the PPIC website:
www.ppic.org/content/pubs/other/114EMR_appendix.pdf

Notes

[1] These results are consistent with and extend those found by Ramakrishnan and Baldassare (2004). The numbers in this figure and the next were calculated by estimating a separate logit regression for each election year with a dummy for California and then predicting the first difference estimate for this California dummy. Coefficients and model fit for all 12 election years are available from the author on request.

[2] All of the data for this section, and for any later analysis that uses voter registration records, were provided by Political Data, Inc. The firm has a copy of the voter registration file, to which it has coded race based on registrant surnames (see note 8) and appended a wide range of information about the disposition of each ballot. The firm is widely considered the best source for data on online registration.

[3] There are certainly reasons to believe that an online registration system might boost registration rates. For instance, in one study, 29 percent of eligible but unregistered Californians said that they did not know where they could find registration forms (Alexander 2004). An online registration system might be easier for these citizens to find and use. But this is far from guaranteed: the online system might not help as much as intended, and these unregistered voters might have reasons for not registering other than a lack of convenience.

[4] The secretary of state's percentages of total change in registration over these same periods are much lower because the secretary is obligated to purge old registrants as well as add new ones. The comparable changes in total official registration are 14.5 percent (2004), 16.2 percent (2008), and 15.1 percent (2012).

[5] Total registration as a share of the eligible population was 75.0 percent in 2004, 74.6 percent in 2008, and 76.7 percent in 2012.

[6] These results are available from the author on request.

[7] To obtain these estimates, we used the Current Population Survey data to conduct a logit regression of registration on online registration status, with fixed effects for states and years to control for unchanging differences across states and uniform changes over time, plus demographic controls to account for unusual changes in a state that had nothing to do with online registration. The resulting estimates identify how much online registration states changed when they adopted the reform, relative to both the changes in other states in the same year and the online registration states' own baseline rates from before the reform. We also tried omitting the demographic controls and obtained a similar result. Coefficients and model fit can be found in Technical Appendix B.

[8] We should be somewhat cautious when comparing the Latino and Asian American numbers from 2012 to those from earlier elections. Latino and Asian American registrants are identified in the voter registration file by surname (which almost certainly leads to some unknown degree of undercounting). The surname estimates for 2012 come from Political Data, Inc., whereas those from 2002 through 2010 come from the statewide database. These sources use slightly different methods for identifying surnames, so different numbers could be attributable to the method alone. This caveat is not relevant when comparing Latino and Asian American estimates over time within a single election year, or for any analysis involving age.

[9] To obtain this estimate, we projected three trend lines from before online registration to the period after it was available: one using all the pre-online registration data; one using only the last 20 days, which was a period when young people were a declining share of new registrants; and one assuming that the average registration rate just before online registration would remain constant. We then assumed that any difference between this new projected registration rate and the actual one was entirely explained by a loss of young voters (rather than an increase in older ones). The estimates ranged from a total of 272,000 young registrants lost to 334,000 lost. This would have dropped the share of young people in the electorate well below 8 percent for the first time in any statewide election since 2002. Details of this estimate are available from the author on request.

[10] Since registration rates over time for young people in earlier years are not available, it is not possible to confirm this idea directly.

[11] A regression discontinuity (RD) analysis of these data confirms a statistically significant increase in the Asian American registration rate right after online registration became available. However, because there was a small surge in Asian American registration immediately before online registration went live, the RD estimate is much smaller than the 3 percent identified in the text and is sensitive to the size of the bandwidth used in the estimation. We used software from Nichols (2012) to implement the Imbens and Kalyanaraman least-squares method to identify the relevant bandwidths. Details of these estimations are available from the author on request. For details of the method, see Imbens and Kalyanaraman (2009).

[12] We ran the analysis of the effect of online registration on turnout in other states for these key subgroups. For Latinos, it did suggest a boost in registration rates of about 2 percentage points under online registration, making California perhaps something of an outlier. However, a similar analysis limited just to young people ages 18 to 24 suggested no effect at all. These results are available from the author on request. The population of Asian Americans in the states that have adopted online registration is generally too small for separate analysis.

[13] A regression discontinuity analysis of these data confirms a statistically significant drop in the Latino registration rate right after online registration became available. The statistical significance of this discontinuity is sensitive to the bandwidth employed in the estimation, but its negative sign is not. We used software from Nichols (2012) to implement the Imbens and Kalyanaraman least-squares method to identify the relevant bandwidths. Details of these estimations are available from the author on request. For details of the method, see Imbens and Kalyanaraman (2009).

[14] Self-reported registration rates in the PPIC samples exceed official rates by about 10 percentage points, because of some unknowable combination of nonresponse bias and exaggeration by the respondents who agreed to participate. The first type of bias might exaggerate Internet use among the unregistered if the more Internet-savvy among them are more likely to participate in the survey. However, the second type of bias will probably understate Internet use among the unregistered, since those most inclined to inaccurately claim that they are registered may also be the sort of educated, engaged population most likely to use the Internet, thus sapping the unregistered category of some of its heaviest Internet users.

[15] Although this approach may have been adopted for any number of reasons, it does make it easier to manage the potential for a single voter to cast a conditional ballot at multiple polling places. It also helps minimize the administrative complexity of ensuring that the proper ballot—in terms of either the races and initiatives offered or the language they are translated into—would be available for any voter who might show up to register.

[16] The Help America Vote Act declares that states must have "a single, uniform, official, centralized, interactive computerized statewide voter registration list" and they "shall enter into an agreement to match information in the database of the statewide voter registration system with information in the database of the motor vehicle authority to the extent required to enable each such official to verify the accuracy of the information provided on applications for voter registration."

[17] The newer methods try much harder to control for any unmeasured differences between political entities that have adopted EDR and those that have not, to ensure that EDR itself is actually the cause of any differences in turnout. These range from difference-in-difference models that use the change before and after the adoption of EDR as a measure of its effect to regression discontinuity designs that compare jurisdictions that just qualify for EDR according to some metric to those that just fail to qualify.

[18] Hanmer (2009) argues that the early adopters saw more of an effect because they embraced EDR as part of their established participatory culture. States that adopted EDR grudgingly—such as Idaho and Wyoming, which sought to avoid coverage under the National Voter Registration Act in the early 1990s—had populations that were less amenable to the reforms in general and so less likely to take advantage of them. California likely falls between these two extremes: the state adopted the reform voluntarily but it has not been an especially high-participation state, at least recently. However, see Keele and Minozzi (2013) for evidence of small or even negative effects even in Minnesota and Wisconsin.

[19] Our analysis consists of a time-series cross section of voter turnout for all 50 states, with fixed effects for states and years and other key controls. We estimated this model both with actual election returns and with individual-level survey data from the Current Population Survey. The detailed results of these models are in Technical Appendix B.

[20] For California, both Asian Americans/Pacific Islanders and Latinos are important groups to watch. However, the size of these groups in EDR states is too small for reliable analysis.

[21] We conducted a difference-in-difference analysis of the change in Montana, using Idaho, Wyoming, North Dakota, and South Dakota as comparison states and controlling for age, marital status, gender, education, employment status, and mobility as demographic controls. In this model, the estimated effect of EDR was a statistically insignificant increase in turnout of 1 percent. Coefficients and model fit can be found in Technical Appendix B.

[22] Many of these numbers come from the Federal Election Assistance Commission, which conducts a survey of state election officials every two years. The question wording for this survey refers to "same day registration" and does not ask states to identify what this means.

[23] Currently, there are no states with both online registration and election day registration. Thus, it is impossible to say just what the effect of this combination might be.

[24] Overall, the evidence is mixed on a positive effect of VBM on turnout, but several studies have found a modest effect in at least certain circumstances. For a good summary, see Gerber, Huber, and Hill (2013). For evidence that VBM may actually *reduce* turnout in California, see Kousser and Mullin (2007).

[25] The closest congressional or state legislative outcome in the 2012 general election was Assembly District 36, where Democrat Steve Fox defeated Republican Ron Smith by just 145 votes. Unfortunately, we do not have late ballot data for that race in particular, so we cannot say whether late ballots could have flipped the outcome.

[26] The 24 counties are Amador, Butte, Colusa, Contra Costa, Fresno, Glenn, Humboldt, Inyo, Lassen, Los Angeles, Merced, Mono, Napa, Orange, Placer, Plumas, Sacramento, San Benito, San Diego, Santa Clara, Shasta, Siskiyou, Sutter, and Ventura.

[27] There is always the chance that this number could increase under SB 29 if voters waited until they knew the election outcome and then fraudulently declared that their ballot was cast on time. However, since the ballots would have to be certain to arrive without a postmark, the fraud would require impersonating a member of the postal service to deliver the late ballot or ballots without going through the regular mail. Although this is certainly possible in theory, it would seem to be difficult to accomplish without being detected.

[28] This research design necessarily offers only an approximate estimate of the causal effect of consolidation, because it is always possible that voters in the consolidated zip codes differ from others in important ways that have not been controlled for in the model. "Consolidation" in this analysis is treated as having one's P&DC closed and merged with another. We also tried treating as "consolidated" all those facilities that received customers from closed facilities, on the assumption that their workload would increase and reduce the efficiency of mail processing. There was no difference one way or the other from consolidation in that analysis.

[29] The difference is very small, so its importance should not be overstated, and its direction likely says something about the zip codes that were consolidated rather than the act of consolidation itself. Nonetheless, it casts doubt on concerns that continuing cuts at the USPS will lead to more late ballots. We also tried a somewhat different specification that allowed us to use data from all 58 counties. Instead of a late ballot flag, our dependent variable was a flag for whether a registered voter cast a ballot that was counted. We regressed this variable on VBM status, P&DC closure, and an interaction between the two. A negative interaction term would suggest that VBM voters who were also in P&DC zip codes would be especially unlikely to have a counted ballot. We also controlled for the same demographics found in the original model. The results were quite consistent with the findings for the late ballot flag, regardless of the definition of "consolidation" that we used. Coefficients and fit for these models can be found in Technical Appendix B.

[30] See Berinsky (2005) for a similar point about the relative value of reform versus mobilization.

[31] Some research has shown that social media have great potential to mobilize citizens to go to the polls, and it seems relatively easy to incorporate online registration more thoroughly into such efforts (Bond et al. 2012).

[32] Project Vote did a study of state agency compliance in California and found that it had declined steeply since 1995–1996, when the Federal National Voter Registration Act first required that such registration be offered in 1993 (Herman and Hess 2009).

[33] The state with the closest existing approximation of this system is North Dakota, which has no voter registration at all. However, its system predates our data, so we have no robust means of evaluating the effect of its approach. Oregon recently considered adopting exactly the system described here, but the legislation fell one vote short in its state Senate (Holeywell 2013).

[34] For instance, university students from out of state might want to maintain residency in their state of origin instead of being registered in California simply because they engage with a government agency here.

[35] One study that examined the effect of establishing voter registration in Ohio and New York in the 1970s estimated that it reduced turnout by about 3 to 5 percentage points (Ansolabehere and Konisky 2006).

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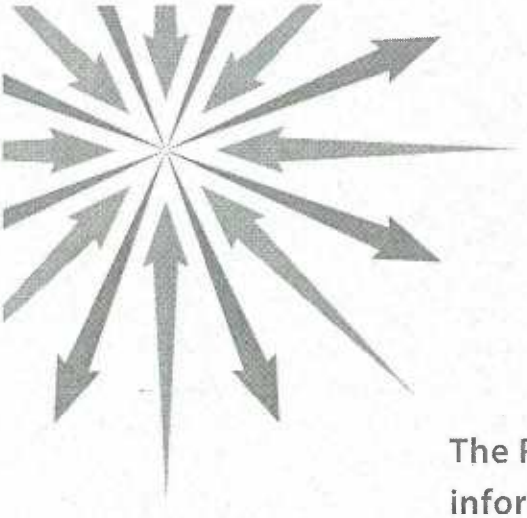

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Technical Appendices

Expanding California's Electorate

Will Recent Reforms Increase Voter Turnout?

Eric McGhee
with research support from Daniel Krimm

Contents

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Appendix A: Current Population Survey Missing Data Imputation

We use the November Supplement to the Current Population Survey (CPS) of the U.S. Census for many of the analyses in this report. The CPS is a survey much like any other public opinion survey, so it has its share of missing data when respondents are not asked a particular question, refuse to answer the question, or profess not to know the answer. Sometimes, missing answers of this sort are interesting in and of themselves because they reveal something about the respondent's point of view. But we use the CPS only to obtain information about which every respondent *ought* to have a true response. Thus, it is preferable to fill in as much of this information as possible.

In its reports of registration and voting, the Census handles the problem of missing data by assuming that every respondent who is missing on those variables was a "no": i.e., was not registered or did not vote. This is a problematic decision, since it seems highly doubtful that *all* or even *almost all* of these respondents were unregistered nonvoters. The CPS has traditionally avoided overt criticism on this score because the missing data strategy has yielded total turnout figures that match official turnout statistics quite closely.

But the official Census reports are accurate because respondents exaggerate their turnout, and the Census approach to missing data simply adjusts down this overreport. Because the method is not designed to correct for overreporting, its accuracy is simply a happy accident. Indeed, the method is far less successful with registration, where it frequently falls far below official registration rates, even though these official numbers are themselves often deflated because of "dead weight" on the rolls—voters who have died or moved but not been pulled off the registration list. (How serious is dead weight? The official registration numbers exceed the population of eligible voters in some states.) In California, the Census method routinely reports registration rates as much as 10 percentage points below the official numbers from the secretary of state. Even the accuracy of the turnout numbers is no longer guaranteed: their accuracy is likely getting worse as the population of nonrespondents becomes ever more biased toward certain demographic groups (McDonald 2012).

Reflecting these problems, the academic studies that use the CPS typically do not follow the Census's method. Instead, the standard approach is to drop respondents with missing values from the analysis entirely. This is a better approach, but it also has its dangers. It assumes that the missing data are what statisticians call *missing completely at random* (MCAR): that is, it pretends as if respondents drew a number from a hat to decide whether they would answer each question, making the population of nonrespondents equivalent to the population of respondents in all but their decision to answer (King et al. 2001). But those who did not answer the question are actually very different from those who did, so treating them as the same introduces new and different biases into the analysis.

A still better practice is to impute values for the missing data with the data available. The process assumes that the data are *missing at random* (MAR): the probability that a value is missing is related to other values in the data set and can be predicted with reasonable accuracy from them. The imputation model is then a likelihood function, where the variables are assumed to be jointly multivariate normal, and this likelihood is then maximized to produce values for the missing cells.[1] The additional uncertainty that results from this

[1] The actual process of computing the data likelihood and taking random draws from it is more complicated than this implies, since the problem is highly computationally intensive. A variety of shortcuts have been devised to address this problem. See King et al. (2001) for more details.

imputation can be incorporated into calculations of the standard errors, allowing one to temper one's conclusions appropriately.

The imputation model here uses all the demographic and political variables in the data set, and was run in Amelia for R (Honaker et al. 2009). The variables in the model are closely correlated and so are likely to be excellent predictors of one another. When we compared the results of this imputation method to official numbers for registration and voting in California, we obtained results that matched trends over time quite closely (as opposed to the Census method, which implied an absolute decline in turnout and registration that has not in fact occurred), and actually hit the point estimates for California's registration with impressive precision. The voting estimates, as one might expect given respondent tendencies to overstate turnout, were somewhat too high. But the trends were all in line with actual turnout figures. Accordingly, we are careful throughout the report to avoid reporting point estimates, which may be distorted by flawed self-reports, and report only relative effects instead.

Appendix B: Detailed Model Results

This appendix contains regression results for any analysis in the main text that employed such methods. Some of these models are run on official reports of registration or voting, and others use individual-level data from the voter registration file, as provided to PPIC by Political Data, Inc. However, most of the models are run on a stacked data set of Current Population Survey November Supplements covering the years from 1980 through 2012 or on a subset of those data as appropriate. Because the CPS employs a complex, stratified survey design, any model we ran with those data also clusters on households and weights using the sampling weight provided by the CPS.[2]

TABLE B1
Model results for analysis of online registration (Dependent variable=registration)

	β	SE
Intercept	–1.514***	0.060
Online registration state	–0.015	0.028
Age	0.017***	0.002
Age^2	0.000***	0.000
Married	0.378***	0.011
Latino	–0.185***	0.021
Asian American/Pacific Islander	–0.775***	0.028
African American	0.393***	0.019
Female	0.161***	0.009
Some high school	0.400***	0.026
High school graduate	0.993***	0.023
Some college	1.732***	0.025
College graduate	2.314***	0.029
Postgraduate	2.665***	0.036
Unemployed	–0.168***	0.027
Moved 1–6 months ago	–0.232***	0.034
Moved 6–11 months ago	–0.196***	0.035
Moved 1–2 years ago	–0.025	0.034
At current address more than two years	0.444***	0.031
Year fixed effects?	Yes	
State fixed effects?	Yes	
–2 * log likelihood		
N	887,813	

SOURCES: U.S. Census Current Population Survey, November Supplement, 1980–2012 (demographics); The National Conference of State Legislatures (online registration).

NOTE: Cell entries are logit regression coefficients. # $p < 0.10$, *** $p < 0.001$.

[2] For detailed thoughts on regression analysis with CPS data, see Davern et al. (2007).

TABLE B2
Model results for turnout using actual election returns (Table 1, Column 2, Row 2)

	β	SE
Intercept	40.86***	11.19
EDR state	0.29	1.09
Closing date	0.04	0.04
Average age	0.00	0.00
High school graduate (%)	0.06	0.08
College graduate (%)	0.09	0.08
African American (%)	0.20#	0.10
Moved in last six months (%)	–0.20#	0.11
Year fixed effects?	Yes	
State fixed effects?	Yes	
Adjusted R^2	0.83	
Root MSE	2.96	
N	450	

SOURCES: U.S. Census Current Population Survey, November Supplement, 1980–2012 (demographics); The Book of the States (closing dates 1994–2012); Mitchell and Wlezien (1996) (closing dates 1980–1992); The National Conference of State Legislatures (election day registration); The United States Elections Project (voter turnout 1980–2012).

NOTE: Cell entries are ordinary least squares regression coefficients. # $p < 0.10$, *** $p < 0.001$.

TABLE B3
Model results for turnout in Iowa using actual election returns (Table 1, Column 2, Row 10)

	β	SE
Intercept	69.88***	1.49
Iowa under EDR	–0.23	2.31
Year = 2008	–0.29	0.94
State = Minnesota	8.58*	1.89
State = South Dakota	–3.30	1.89
State = Nebraska	–6.84*	1.89
State = Kansas	–7.92*	1.89
State = Missouri	–3.28	1.89
Adjusted R^2	0.93	
Root MSE	1.49	
N	12	

SOURCE: The United States Elections Project (voter turnout 1980–2012).

NOTES: Data include turnout numbers for six states (Iowa, Kansas, Minnesota, Missouri, Nebraska, and South Dakota) and two election years (2004 and 2008). Iowa used EDR in its first presidential election in 2008, and none of the comparison states changed its system during the same two-presidential-election period. Cell entries are ordinary least squares regression coefficients. * $p < 0.05$, *** $p < 0.001$.

TABLE B4
Model results for turnout in Montana using actual election returns (Table 1, Column 2, Row 11)

	β	SE
Intercept	64.43***	1.22
Montana under EDR	3.91	1.92
Year = 2008	–2.03#	0.86
State = Idaho	–3.89#	1.55
State = North Dakota	–3.56	1.55
State = South Dakota	3.02	1.55
State = Wyoming	–3.12	1.55
Adjusted R^2	0.50	
Root MSE	1.22	
N	10	

SOURCE: The United States Elections Project (voter turnout 1980–2012).

NOTES: Data include turnout numbers for five states (Idaho, Montana, North Dakota, South Dakota, and Wyoming) and two election years (2004 and 2008). Montana used EDR in its first presidential election in 2008, and none of the comparison states changed its system during the same two-presidential-election period. Cell entries are ordinary least squares regression coefficients. * $p < 0.05$, *** $p < 0.001$.

TABLE B5
Model results for Table 1, all CPS respondents

	β	SE
Intercept	–2.302***	0.064
EDR state	0.028	0.062
Closing date	0.003#	0.002
Age	0.030***	0.001
Age^2	0.000***	0.000
Married	0.413***	0.010
Latino	–0.182***	0.018
Asian American/Pacific Islander	–0.761***	0.029
African American	0.470***	0.016
Female	0.141***	0.008
Some high school	0.367***	0.023
High school graduate	0.985***	0.022
Some college	1.685***	0.022
College graduate	2.285***	0.025
Postgraduate	2.627***	0.029
Unemployed	–0.190***	0.023
Moved 1–6 months ago	–0.205***	0.024
Moved 6–11 months ago	–0.150***	0.027
Moved 1–2 years ago	0.064**	0.026
At current address more than two years	0.524***	0.023
Year fixed effects?	Yes	
State fixed effects?	Yes	
–2 * log likelihood	973367	
N	887,813	

SOURCES: U.S. Census Current Population Survey, November Supplement, 1980–2012 (demographics and turnout); The Book of the States (closing dates 1994–2012); Mitchell and Wlezien (1996) (closing dates 1980–1992); The National Conference of State Legislatures (election day registration).

NOTE: Cell entries are logistic regression coefficients. * $p < 0.05$, ** $p < 0.01$, *** $p < 0001$.

TABLE B6
Model results for Table 1, CPS respondents without a high school diploma

	β	SE
Intercept	–1.796***	0.077
EDR state	-0.019	0.077
Closing date	0.004#	0.002
Age	0.040***	0.002
Age^2	0.000***	0.000
Married	0.486***	0.013
Latino	–0.349***	0.024
Asian American/Pacific Islander	–0.549***	0.039
African American	0.499***	0.021
Female	0.138***	0.010
Unemployed	–0.200***	0.032
Moved 1–6 months ago	–0.165***	0.029
Moved 6–11 months ago	–0.062	0.043
Moved 1–2 years ago	0.091***	0.030
At current address more than two years	0.555***	0.026
Year fixed effects?	Yes	
State fixed effects?	Yes	
–2 * log likelihood	591418	
N	472,986	

SOURCES: U.S. Census Current Population Survey, November Supplement, 1980–2012 (demographics and turnout); The Book of the States (closing dates 1994–2012); Mitchell and Wlezien (1996) (closing dates 1980–1992); The National Conference of State Legislatures (election day registration).

NOTE: Cell entries are logistic regression coefficients. # $p < 0.05$, ** $p < 0.01$, *** $p < 0001$.

TABLE B7
Model results for Table 1, CPS respondents who have moved in the last six months

	β	SE
Intercept	−1.924***	0.182
EDR state	0.109	0.162
Closing date	−0.003	0.004
Age	0.018***	0.005
Age^2	0.000	0.000
Married	0.256***	0.028
Latino	−0.267***	0.051
Asian American/Pacific Islander	−0.569***	0.085
African American	0.436***	0.039
Female	0.145***	0.021
Some high school	0.124	0.084
High school graduate	0.746***	0.081
Some college	1.396***	0.088
College graduate	2.007***	0.088
Postgraduate	2.259***	0.096
Unemployed	−0.285***	0.053
Year fixed effects?	Yes	
State fixed effects?	Yes	
−2 * log likelihood	147234	
N	119,052	

SOURCES: U.S. Census Current Population Survey, November Supplement, 1980–2012 (demographics and turnout); The Book of the States (closing dates 1994–2012); Mitchell and Wlezien (1996) (closing dates 1980–1992); The National Conference of State Legislatures (election day registration).

NOTE: Cell entries are logistic regression coefficients. * $p < 0.05$, ** $p < 0.01$, *** $p < 0001$.

TABLE B8
Model results for Table 1, CPS respondents younger than age 25

	β	SE
Intercept	–2.055***	0.217
EDR	0.104	0.150
Closing date	0.000	0.004
Married	–0.034	0.039
Latino	–0.305***	0.040
Asian American/Pacific Islander	–0.543***	0.070
African American	0.396***	0.040
Female	0.153***	0.025
Some high school	0.848***	0.194
High school graduate	1.275***	0.189
Some college	2.024***	0.186
College graduate	2.746***	0.192
Postgraduate	2.682***	0.261
Unemployed	–0.256***	0.045
Moved 1–6 months ago	–0.040	0.057
Moved 6–11 months ago	–0.005	0.061
Moved 1–2 years ago	0.204**	0.059
At current address more than two years	0.556***	0.061
Year fixed effects?	Yes	
State fixed effects?	Yes	
–2 * log likelihood	151015	
N	118,682	

SOURCES: U.S. Census Current Population Survey, November Supplement, 1980–2012 (demographics and turnout); The Book of the States (closing dates 1994-2012); Mitchell and Wlezien (1996) (closing dates 1980–1992); The National Conference of State Legislatures (election day registration).

NOTE: Cell entries are logistic regression coefficients. * $p < 0.05$, ** $p < 0.01$, *** $p < 0001$.

TABLE B9
Model results for Table 1, estimate for Iowa using CPS

	β	SE
Intercept	–1.729***	0.239
EDR	0.067	0.116
Age	–0.008	0.007
Age^2	0.000***	0.000
Married	0.534***	0.055
Female	0.220***	0.038
Some high school	0.644***	0.128
High school graduate	1.310***	0.113
Some college	2.109***	0.118
College graduate	2.931***	0.133
Postgraduate	3.411***	0.180
Unemployed	–0.101	0.120
Moved 1–6 months ago	–0.222	0.182
Moved 6–11 months ago	–0.247	0.167
Moved 1–2 years ago	0.054	0.170
At current address more than two years	0.527**	0.158
Year = 2008	–0.032	0.058
State fixed effects?	Yes	
–2 * log likelihood	19438	
N	20,245	

SOURCES: U.S. Census Current Population Survey, November Supplement, 1980–2012 (demographics and turnout); The Book of the States (closing dates 1994–2012); Mitchell and Wlezien (1996) (closing dates 1980–1992); The National Conference of State Legislatures (election day registration).

NOTES: Data have been limited to Iowa and similar neighboring states (Minnesota, South Dakota, Nebraska, Kansas, and Missouri), as well as to the presidential election just before (2004) and just after (2008) Iowa changed to EDR. Cell entries are logistic regression coefficients. * $p < 0.05$, ** $p < 0.01$, *** $p < 0001$.

TABLE B10
Model results for Table 1, estimate for Montana using CPS

	β	SE
Intercept	–1.612***	0.338
EDR	0.021	0.154
Age	–0.004	0.009
Age^2	0.000*	0.000
Married	0.515***	0.063
Female	0.146***	0.046
Some high school	0.330#	0.172
High school graduate	1.029***	0.153
Some college	1.687***	0.159
College graduate	2.503***	0.171
Postgraduate	2.795***	0.248
Unemployed	–0.376*	0.146
Moved 1–6 months ago	–0.123	0.225
Moved 6–11 months ago	–0.189	0.246
Moved 1–2 years ago	–0.043	0.208
At current address more than two years	0.589**	0.197
Year = 2008	–0.097	0.069
State fixed effects?	Yes	
–2 * log likelihood	12752	
N	12,368	

SOURCES: U.S. Census Current Population Survey, November Supplement, 1980–2012 (demographics and turnout); The Book of the States (closing dates 1994–2012); The National Conference of State Legislatures (election day registration).

NOTE: Data have been limited to Montana and similar neighboring states (Idaho, North Dakota, South Dakota, and Wyoming), as well as to the presidential election just before (2004) and just after (2008) Montana changed to EDR.

TABLE B11
Late ballot statistics from Table 3 by county

	Total number of late ballots	Share of VBM ballots cast	Share of uncounted ballots
Amador	29	0.27%	24%
Butte	123	0.22	7
Calaveras	52	0.00	33
Colusa	25	0.85	81
Contra Costa	866	0.38	33
Fresno	545	0.41	68
Glenn	15	0.28	79
Humboldt	101	0.35	45
Inyo	17	0.35	16
Lassen	18	0.30	82
Los Angeles	5,576	0.52	66
Madera	55	0.22	19
Mariposa	14	0.26	19
Merced	191	0.69	74
Mono	19	0.96	15
Napa	138	0.39	27
Orange	2,343	0.39	74
Placer	330	0.29	46
Plumas	47	0.69	60
Sacramento	1,242	0.40	40
San Benito	52	0.47	25
San Diego	1,677	0.24	55
San Francisco	1,327	0.70	41
Santa Clara	1,838	0.39	36
Shasta	88	0.19	20
Sierra	19	1.03	24
Siskiyou	94	0.94	44
Sonoma	307	0.21	36
Sutter	41	0.23	26
Tehama	21	0.14	16
Ventura	668	0.41	29

SOURCES: Political Data, Inc., CACEO (total late and VBM ballots), California Secretary of State (total uncounted VBM ballots by county).

NOTES: Political Data, Inc. provided data for Calaveras, Madera, Mariposa, San Francisco, Sierra, Sonoma, and Tehama counties. CACEO provided data for Amador, Fresno, Humboldt, Inyo, Los Angeles, Mono, Orange, Plumas, Sacramento, San Benito, San Diego, Santa Clara, and Siskiyou counties. Data for the remaining counties were available from both sources. Where the sources did not match, the higher number is reported.

TABLE B12
Model results for late ballot estimates, VBM voters in late ballot counties only (Table 4)

	β	SE
Intercept	–5.529***	0.056
New registrant since 2010	–0.127**	0.041
Voted in 2010	–1.017***	0.041
Age < 25	1.484***	0.039
Democrat	0.342***	0.044
Independent	0.587***	0.045
Latino	–0.290***	0.050
Asian American/Pacific Islander	0.346**	0.051
County fixed effects?	Yes	
–2 * log likelihood	51090.38	
N	1,230,536	

SOURCE: Political Data, Inc.

NOTE: Analysis includes data from 18 counties provided by Political Data, Inc.: Butte, Calaveras, Colusa, Contra Costa, Glenn, Lassen, Madera, Mariposa, Merced, Napa, Placer, San Francisco, Shasta, Sierra, Sonoma, Sutter, Tehama, and Ventura.

TABLE B13
Model results for USPS consolidation analysis, Dependent variable=late ballots, VBM voters in counties with late ballot data

	Consolidated = closed and merged		Consolidated = closed or merged	
	β	SE	β	SE
Intercept	–4.926***	0.059	–5.515***	0.100
Consolidated zip code	–2.330***	0.091	–0.014	0.083
New registrant since 2010	–0.161***	0.041	–0.127***	0.041
Voted in 2010	–1.022***	0.041	–1.017***	0.041
Age < 25	1.553***	0.039	1.484***	0.039
Democrat	0.196***	0.045	0.342***	0.044
Independent	0.425***	0.046	0.587***	0.045
Latino	–0.187***	0.050	–0.291***	0.050
Asian American/Pacific Islander	0.174***	0.052	0.346***	0.051
County fixed effects?	Yes		Yes	
–2 * log likelihood	50067.43		51090.35	
N	1,230,536		1,230,536	

SOURCE: Political Data, Inc.

NOTE: Analysis includes data from 18 counties provided by Political Data, Inc.: Butte, Calaveras, Colusa, Contra Costa, Glenn, Lassen, Madera, Mariposa, Merced, Napa, Placer, San Francisco, Shasta, Sierra, Sonoma, Sutter, Tehama, and Ventura.

TABLE B14
Model results for USPS consolidation analysis, Dependent variable=counted ballots, all counties

	Consolidated = closed and merged		Consolidated = closed or merged	
	β	SE	β	SE
Intercept	–1.388***	0.002	–1.413***	0.002
VBM in consolidated zip code	0.018***	0.004	–0.012***	0.003
VBM	0.489***	0.001	0.493***	0.002
Consolidated zip code	–0.008**	0.003	0.059***	0.002
New registrant since 2010	1.062***	0.002	1.062***	0.002
Asian American/Pacific Islander	–0.379***	0.002	–0.381***	0.002
Latino	–0.230***	0.001	–0.221***	0.001
Foreign-born	–0.083***	0.002	–0.086***	0.002
Age	0.013***	0.000	0.014***	0.000
Homeowner	0.669***	0.001	0.668***	0.001
Democrat	0.323***	0.001	0.322***	0.001
Republican	0.207***	0.002	0.211***	0.002
Voted in 2010	2.034***	0.001	2.033***	0.001
–2 * log likelihood	16482375		16480555	
N	17,795,670		17,795,670	

SOURCE: Political Data, Inc.

NOTE: Analysis includes data from all counties in 2012.

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