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Roll-off at the top of the ballot: intentional undervoting in American presidential elections

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Roll Off at the Top of the Ballot:
Intentional Undervoting in American Presidential Elections

Abstract

Every four years, more than 2% of voters fail to cast a valid vote in the U.S. presidential contest. The 2000 election highlighted the fact that many intended votes are voided because of voter confusion associated with complicated ballot designs or voting equipment. Using survey data, this study provides estimates of the proportion of voided presidential ballots that do not represent errors but rather intentional undervotes. Voters who are older, poorer, and who do not identify with either major party are more likely to intentionally refrain from casting a presidential vote. African American-white differences are very minor, implying that racial disparities in the rate of voided votes cannot be attributed to a stronger tendency among African American voters to intentionally skip the presidential contest.

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1. Introduction

Every four years, more than 2% of voters go to the polls in November without casting a valid vote in the U.S. presidential contest (Caltech/MIT Voting Project, 2001). The 2000 election highlighted the fact that many intended votes are disqualified because of voter errors resulting from confusing ballot designs or from complicated or defective voting equipment.

Numerous reforms in election administration aiming to reduce the frequency of these errors have been proposed at the state and federal level. As of July of 2002, both houses of Congress had passed election reforms including voting equipment grants for localities, and conferees attempted to work out the differences between the two versions of the legislation. Presidents of two of the nation's top engineering schools launched an initiative to assess existing voting technology and to develop new, more voter-friendly voting machines.[1]

However, some of these "errors" result from voluntary abstention, rather than some sort of equipment or counting failure. Estimating the number of <u>intentional</u> undervotes is essential for setting realistic goals for minimizing the rate of voided votes.[2] Allegations of "millions of disenfranchised voters"[3] and widespread use of the term "error rate"[4] as synonymous with voided votes suggest that many observers believe nearly all of the voided votes were accidental. On the other extreme, some of President Bush's spokespersons during the Florida recount claimed that "most if not virtually all so-called undervotes" involved voters who "didn't intend

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[1] See "MIT,Caltech Join Forces to Develop Reliable, Uniform U.S. Voting Machine." MIT News Release, December 14, 2000 (web.mit.edu/newsoffice/nr/2000/voting.html).

[2] Scholars have used different terms to capture the meaning of the both the concepts of undervoting and overvoting. Cal-Tech/MIT 2001 and Brady et al. 2001 use the term "residual" vote. Here the term "voided votes" is used to signify the idea that the entire ballot is not voided and that some of the problem votes result not from faulty equipment, but a conscious choice on the part of the voter.

[3] For example, see remarks by Senator Charles Schumer (D-NY) at the March 14 Senate Rules Committee hearing on election reform; see also Hoyer, Steny and John Conyers. "Equipped for Democracy," *Washington Post*, 15 July 2002.

[4] For example, "Technology Slashes Detroit Voting Error," *Washington Post*, 5 April 2001; see also Report of the Governor's Select Task Force in Florida (www.collinscenter.org/usr_doc/52816.doc).

to vote for president."[5] Based on responses from two independent surveys (National Election Study and Voter News Services Exit Polls), we find that a minimum of one ninth, and as many as two fifths of voided presidential votes are accounted for by intentional undervoting.

Numerous reports have indicated that the rate of voided ballots for all reasons (both accidental and intentional) is far higher in precincts and counties with large numbers of minorities and poor persons (Knack and Kropf, forthcoming; Tomz and Van Houweling, forthcoming; Kimball *et al.* 2001; Herron and Sekhon 2001). Much mentioned in the media is the fact that certain voting technologies such as punchcards make it more likely that there will be no vote for the presidential candidate, especially in minority areas.[6] However, scholars should also analyze the possibility that this pattern is simply due to the fact that minority and poor voters are more likely than other voters to skip the presidential contest voluntarily, for example if the party primaries tend to produce centrist candidates that are ideologically distant from many poor and minority voters. On the local level, scholars have identified this pattern (Vanderleeuw and Liu 2002), but not on the national level, and not with individual-level data. If this is true, modernizing or changing voting equipment may have little effect on racial disparities.

However, survey evidence presented below indicates that differences across racial groups in intentional undervoting are insignificant, and differences associated with income, while statistically significant, are relatively small. This evidence suggests that accidental undervoting and overvoting account for most of the voided presidential ballots in poor and minority precincts. This research suggests that scholars study reasons other than voluntary undervoting for the racial and economic disparity in voided ballots in order to ensure equal protection.

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[5] "Florida Ballot Spoilage Likelier for Blacks: Voting Machines, Confusion Cited." *Washington Post*, 3 December 2000.

Previous studies on "roll-off" have emphasized other equal protection issues related to the rate of voided votes, including age, income and party of affiliation. Thus, other variables studied here include demographic variables such as age. Policymakers will need to consider whether certain technologies are more difficult for example, for older individuals to use, but they must first have a good estimate as to the number of voided votes attributable to intentional undervoting on the part of older individuals.

We also test for the importance of state-level variables. These state-level variables are important because they can potentially cause researchers to overestimate the number of ballots voided accidentally. Certain state-level variables including the presence on the ballot of Senate or gubernatorial contests or a "straight party vote" option, the number of presidential candidates listed on the ballot, and the competitiveness of the presidential contest in the state could affect the number of intentional undervotes in the Presidential contest. Our results indicate that senate contests increase intentional non-voting in the presidential race, while more competitive contests for states' electoral votes shows some evidence of reducing intentional non-voting.

2. Estimating Intentional Undervoting

Numerous studies have examined the determinants of "roll-off" in contests located below the top of the ballot, defined as a situation where no vote is registered for a particular race. Roll-off is typically measured relative to the total votes cast for the contest at the top of the ballot (Vanderleeuw and Liu 2002), though studies following the 2000 election on the effects of voting equipment measure roll off for presidential, senate and gubernatorial races relative to total

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[6] For example, see "Racial Pattern in Demographics of Error-Prone Ballots," *New York Times*, 29 November 2000; "A Racial Gap in Voided Votes," *Washington Post*, 27 December 2000; "Florida Ballot Spoilage Likelier for Blacks: Voting Machines, Confusion Cited." *Washington Post*, 3 December 2000.

turnout (Knack and Kropf, forthcoming.; Cal-Tech/MIT 2001; Brady et al. 2001; Kimball *et al.* 2001).

Most studies of roll-off (e.g., Vanderleeuw and Liu 2002; Wattenberg *et al.*, 2000; Ansolabehere *et al.*, 1994; Vanderleeuw, and Utter, 1993; Engstrom and Caridas, 1991) assume that roll-off is intentional, in the sense that the voter does not leave the polls thinking that he or she voted in a contest when no vote was actually recorded. Explanations tend to focus on lack of voter information and interest (Wattenberg et al., 2000), or in the case of local elections, alienation caused by the lack of candidates or office holders of a certain ethnicity (Vanderleeuw and Liu 2002; Vanderleeuw and Utter 1993; Engstrom and Caridas 1991;Vanderleeuw and Engstrom 1987). Consistent with these explanations, racial disparities in roll-off tend to be lower in contests involving at least one African-American candidate or greater numbers of African American voters, signifying the importance of African American institutional political power (Vanderleeuw and Liu 2002; Vanderleeuw, and Utter, 1993; Engstrom and Caridas 1991; Vanderleeuw and Engstrom 1987). Other studies of roll-off in lower contests on the ballot consider the possible role of confusing ballot design or difficulty in using voting equipment (e.g., Bullock and Dunn, 1996; Nichols and Strizek, 1995; Shocket *et al.* 1992; Darcy and Schneider, 1989; Thomas 1968; Walker 1966).

In contrast, "roll off" in presidential contests was neglected until after the 2000 election. Because the presidential contest generates far more interest and media attention than other races, intentional undervoting is more rare and a much larger share of "roll off" may be attributable to voter error or faulty equipment (see Knack and Kropf, forthcoming). Whether the votes are intentional or accidental is a critical difference when assessing whether buying new voting equipment will be effective in reducing the rate of voided votes.

Beliefs vary widely regarding what fraction of the roughly 2% of ballots nationwide with no valid presidential vote are intentional, and how many are accidental.[7] Changes in a county's rate of voided ballots following a change in voting technology can provide some indication. For example, Detroit's rate of voided presidential ballots reportedly declined from about 3.1% in 1996 to 1.1% in 2000, coinciding with a shift from punch-card to precinct-count optical scan technology which allowed voters to check their ballots for overvotes.[8] This particular case suggests that the majority of voided ballots were accidental rather than intentional, but more comprehensive and systematic information is needed because of wide variability across jurisdictions in the measured impact of changes in voting equipment.

Because it is not possible to distinguish intentional from accidental undervotes by examining the ballots themselves or asking elections officials, voter self reports represent the only systematic way to estimate the incidence of intentional undervoting.[9] Survey questions from the National Election Studies (NES) and from the Voter News Services (VNS) exit polls can be used to determine the number of voters who intentionally bypass the presidential contest. In the NES, respondents who indicate they voted in the November elections are then asked "did you vote for a candidate for President?" Responses for each election dating to 1980 are summarized in Table 1.

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[7] Other countries have had an interest in such data for much longer than the United States. For example. Australia has measured information on invalidated ballots since at least 1977. They average 3-4 percent "informal" ("informal" denoting ballots cast but either making a mistake or intentionally undervoting) votes for both senate and house races, but also do not differentiate between accidental and intentional undervoting (see http://www.aec.gov.au/voting/formalvotes.htm).

[8] See "Technology Slashes Detroit Voting Error," *Washington Post*, 5 April 2001

[9] One may question the reliability of this data. It is well documented that more people say they voted in surveys than actually voted. However, the exit polls conducted by VNS are designed to catch people as they leave the polling place. In terms of the reliability of the answer "didn't vote for President", the phenomenon of "social desirability bias" may cause us to underestimate the number of individuals who actually did not cast a vote for president, if most respondents believe the "socially desirable" action is to cast a valid vote for a presidential candidate. To the extent such a bias exists, our results may exaggerate somewhat the role of voting equipment deficiencies in producing voided votes. This is however, an empirical question that cannot be completely answered in this context. The fact remains that many votes are intentional undervotes.

Using survey data to analyze undervotes, one can see that the percentage of reported undervotes varies slightly from one election to the next, likely due mostly to sampling error. Combined over the 1980 to 2000 period, a total of 56 of the 7,699 (0.73%) professed voters indicated they deliberately skipped the presidential contest on their ballots. Exit polling data from VNS provide an independent check on this estimate.[10] The 0.73% figure from the NES for intentional undervoting turns out to be broadly consistent with the rate of undervoting reported in the exit polls for 1992, the only year for which VNS data allow such a figure to be calculated. Among all exit poll respondents, 0.23% checked the box "didn't vote for President."[11] Another 0.54% skipped the question. However, according to VNS staff, many undervoters likely skipped the presidential vote question because they thought it was not applicable to them, not noticing the "didn't vote" option at the end of the list of five choices. Thus, for the remainder of this paper, the 278 missing values are coded as intentionalundervotes, based on this informationfrom VNS.[12] Thus, up to 0.77% intentionally undervoted, according to the VNS data.

Similarity across the two sources does not necessarily indicate that the estimates are correct. Some actual undervoters may have claimed to vote for President to appear more virtuous, or some actual voters may have stated they didn't vote, to avoid having to report for whom they voted.

Nevertheless, the similarity of the estimates derived from these two independent sources is assuring, given the very different methods and samples used. The NES is designed to be

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[10] All analyses of VNS data are weighted to form a nationally representative sample.
[11] The other four boxes were for Clinton, Bush, Perot, and "other" with space to write in a name. Since citizens in Nevada have a "none of the above" option listed on the ballot, those who specifically voted that option are coded as having voted as if they had voted for a candidate.
[12] The results of the analyses presented throughout this paper are largely similar when one does not code the missing values as "didn't vote for president" but rather, left them missing. However, there are some minor differences in the

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representative at the national but not the state level, and typically includes respondents from only about 30 states. The VNS exit polls are designed to be representative at the state level, as well as at the national level when weighted appropriately, and includes respondents from every state. The NES undertakes lengthy oral interviews with respondents in person or over the telephone. In contrast, the VNS questionnaires contain only a tiny fraction of the number of questions in the NES survey, and are handed to voters to fill out. On completing the survey, voters fold it and put it in a box, so exit polling responses are confidential.

3. Who Undervotes?

Unlike the NES samples, the VNS sample is sufficiently large to examine what factors are associated with intentional undervoting. We first examine who is more likely to undervote, with simple comparisons across demographic groups. We then consider state-level variables such as the presence of other salient contests on the ballot. Second, we report results from logistic regression analyses that can determine, for example, whether a variable such as income matters holding constant other variables such as age and ethnicity. Among the groups analyzed, there are some significant differences. These differences are likely due partly to alienation on the part of some voters, for example if no candidate adequately represents the interests of some groups. Differences may also be attributable to variations in the salience of local vs. national issues.

As shown in Table 2, there is little difference in intentional undervoting across most ethnic groups, with 0.73% of whites and 0.82% of African Americans indicating they skipped the presidential contest. The rate for Hispanics is slightly lower, and for Asian Americans slightly higher, than the rates for whites and African Americans. Undervoting is a much higher

regression analyses. These differences do not change the basic policy information/recommendations provided by this paper. The results are available from the authors.

3% for the "other" category, which comprises just over 1% of the sample and presumably includes mostly Native Americans, Pacific Islanders and some persons of mixed ancestry. These "other" minority groups may feel somewhat alienated because few, if any candidates represent or promote their interests. Candidates are more likely to champion the policies that majority groups or significant blocs of voters (more voters) would prefer.[13]

Low income is associated with more undervoting. The rate for respondents with family income under $15,000 is 1.54%, about double the rate for those with family incomes of between $15,000 and $30,000.[14] The rate is halved again for those with incomes above $30,000, and declines only slightly with further increases in income group. This pattern is consistent with the possibility that lower-income voters are more likely than higher-income voters to be motivated to go to the polls by local issues that more directly affect their quality of life.

Undervoting is slightly lower for voters age 25-39 than for the youngest group. The most notable difference however is the rising rate beyond age 50. The rate for voters 60 and over is 1.32%. If in fact, most of the undervoting by seniors is intentional, changing to different voting technologies to compensate for their lessened manual dexterity or vision may have modest benefits.

Party differences are small, with 0.69% of self-identified Democrats indicating they didn't vote for President, compared to 0.52% of Republicans. More than 1% of voters

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[13] The work of Vanderleeuw and Liu 2002; Harris and Zipp 1999; Vanderleeuw and Utter, 1993; Engstrom and Caridas 1991; Vanderleeuw and Engstrom 1987 all suggest that on the local level, the racial context of an election will cause more or less roll-off. The weight of this research on aggregate voting returns data indicates that "black voter roll-off is responsive to the relative size of the black electorate and the salience of the election to black voters" (Harris and Zipp 1993: 495). These findings do not necessarily contradict this work on the Presidential level— interest in the Presidential race is likely to be higher and representation of African American interests likely (though not certainly) are more likely. There is no exit poll question in all states that measures political alienation.

[14] Exact income and age are unknown, as exit poll respondents mark one of eight categories for their age (collapsed here to six, as provided by VNS), and one of five categories for income.

classifying themselves as "independents" or "something else" did not vote for President.[15] Here potential political alienation provides a reason why independents are more likely to roll-off: lack of a candidate that represents their interests may be driving this difference between party-identifiers and independents.

Intentional undervoting may also be influenced by other contests on the ballot. For example, where there is little else of interest on the ballot, virtually everyone who goes to the polls will want to cast a presidential vote. Where there are other important contests on the ballot, such as mayoral or gubernatorial races, Senate races, and well-publicized initiatives (e.g. those regarding term limits in 14 states in 1992), a larger number of voters who have no desire to cast a vote in the presidential contest may show up at the polls.

We can identify the state, but not the city, county, or congressional district of VNS respondents, so we are somewhat limited in ballot effects that we can measure. As shown in Table 2, voters with a Senate race on their state's ballot are nearly twice as likely to undervote (0.90%) as voters with no Senate race on the ballot (0.48%). A governor's contest on the ballot is also associated with increased undervoting in the presidential contest. Nearly 1% of voters in states with a governor's race on the ballot skipped the presidential contest, compared to 0.73% of voters in states with no opportunity to vote for Governor. As expected, the presence of other contests--particularly Senate contests—on the ballot appears to increase the number of voters who do not care to vote in the presidential race. However, undervoting is not higher in states with term limit initiatives on the ballot (result not shown in Table 2).

We also examined the possible effects of other state-level variables. Many states place a straight-party vote option on the ballot, by which the pull of a single lever or a single mark on the

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[15] The VNS partisanship question is: "No matter how you voted today, do you usually think of yourself as a Democrat/Republican/Independent/something else."

ballot casts a vote for all of a particular party's candidates—including the presidential candidate—that appear on the ballot. This feature has obvious implications for reducing roll-off in less salient contests on the ballot (Wattenberg *et al.* 2000; Walker 1966). It could potentially reduce undervoting at the top of the ticket as well. However, we find no supporting evidence in the VNS data, with 0.78% of voters in straight-party states and 0.76% of voters in other states declining to cast a vote for President. Other studies provide mixed evidence as to whether a straight-party option even decreases voided ballots in the aggregate—both accidental and intentional (Knack and Kropf, forthcoming; Kimball et al. 2001). Thus, in this context, it is only somewhat surprising that the straight ticket option does not deter those who intend not to vote for the President.[16] The straight ticket option is likely to have its greatest effect on contests lower down on the ballot.

States also differ substantially in the obstacles faced by presidential candidates in getting their names on the ballot. The number of candidates with their names placed on the ballot accordingly varies importantly across states. In 1992, several states had only three presidential candidates on the ballot, while New Jersey had eleven. With more candidates, abstention related to alienation or indifference may decline, as more voters can find a candidate with a similar ideology, or that caters to their pet issue. On the other hand, confusion that results from a larger number of candidates may ameliorate this effect.[17] However, we found no relationship between the number of candidates on the ballot and the likelihood of undervoting.

Fewer voters may choose to skip the presidential contest in "battleground" states than in other states (e.g. Utah) where the winner of the state's electoral votes is a foregone conclusion.

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[16] North Carolina and South Carolina both have straight-ticket balloting, but the presidential race is not included within the straight-ticket vote, so both are coded as not being straight ticket. Results are not sensitive to how these states are coded.

Accordingly, we calculated a closeness variable based on the absolute value of the difference in the vote shares of the top two vote winners in the state. Using this or alternative measures of closeness, voters in more competitive states are found to be no less likely to undervote.

4. Logistic Regressions

Table 3 reports results from logistic regression analyses of individual level factors determining intentional undervote.[18] The dependent variable is coded 1 for voters who reported that they did not vote in the presidential contest or did not answer the question, and is coded 0 for all other voters. Negative coefficients for independent variables, or odds ratios less than one, thus indicate a reduced probability of undervoting, i.e. an increased probability of voting for a presidential candidate. While Table 3 focuses on individual-level determinants of roll-off, there must be other important determinants of undervoting which we are unable to measure, using the limited information available from the exit polls. For example, we know only the states of VNS respondents, while the contests on voters' ballots differ across counties within a state, and even across towns within counties. To the extent that any of the omitted variables differ at the state level, we can capture their collective effects by adding a set of state dummy variables to the model, which we do in Table 3.[19] Table 4 is included to explore some of the possible state-level effects. While Table 3 has potentially more explanatory power as a model, Table 4 examines specifically the state factors that may or may not affect who undervotes intentionally.

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[17] Knack and Kropf (forthcoming) show using county-level data that increasing number of candidates does decrease the number of voided presidential votes, but after a certain level (9) those effects diminish.
[18] Results were nearly identical to those reported below when skewed logit estimation (Nagler 1994) is used instead of logistic regression.
[19] Adding the full set of state dummies reduces the potential for non-independence of errors among respondents within a given state.

Among ethnic categories, only "others" are found to undervote at significantly different rates from whites, the omitted category. Quantitatively, the effect of being in the "other" category is very large, increasing the probability of undervoting by about 1.59 percentage points.[20] Controlling for income and other variables thus does not narrow the difference between "others" and whites, African Americans etc. that was reported in Table 2, which exceeded 2 percentage points.

Older voters are significantly more likely than younger voters to skip the presidential contest. In Table 3, the four under-50 age groups have been collapsed into one (omitted) category, because preliminary analysis found only trivial differences among them. The two older groups both undervote at significantly greater rates than the under-50 omitted category. Being a voter between ages 50 and 59 increases the probability of undervoting by about 0.37 percentage points on average, while the corresponding effect for voters over 60 is about 0.48 points.[21]

While greater income is always associated with a lower probability of intentional undervoting in Table 2, the pattern changes somewhat when other variables are controlled for in Table 3. The lowest-income group undervotes at a higher rate than the omitted highest-income (over $75,000) group, but the difference is significant only at the .10 level for a two-tailed test. Being in the lowest-income group (under $15,000) increases the likelihood of undervoting on average by about 0.17 percentage points relative to the highest-income voters (over $75,000).

The middle-income groups actually undervote at lower rates than the highest- income group, controlling for other variables. For the $15,000-$30,000 group, this difference is significant at the .055 level, and the average effect on the probability of undervoting is about

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[20] This figure is determined by computing the effects of a one unit change in the independent variable on the probability of undervoting, holding all other variables constant at their means. Other marginal effects reported below are computed analogously.

0.15 percentage points.[22] Preliminary analysis found no difference between the $30,000-$50,000 and the $50,000-$75,000 groups, which were then collapsed into one category. This group undervotes at significantly (p<.0001) lower rates than the highest-income group. There is about a 0.48 percentage-point difference in the probability of undervoting for members of the $30,000-$75,000 group and the over-$75,000 group.

No difference between Democrats and Republicans is found. Independents and others undervote at significantly (p<.0001) higher rates than Republicans (the omitted category), with a marginal effect of about 0.31 percentage points on average. This effect is only slightly smaller than the difference reported in Table 2, indicating that the high undervoting rate of Independents is mostly not attributable to differences in age, income or other variables held constant in Table 3 and is more likely attributable to alienation or some similar explanation.

Table 4 explores the reasons why state variables may be important to include. The pseudo-R^2 decreases only slightly, from .07 to .05, suggesting that omitted state-level variables are less important than local-level differences in election calendars or election administration, or individual-level differences in political attitudes, information, or demographic factors not included in the exit polls.[23] Results on the demographic and party variables are only slightly different between Table 3 and Table 4.

Of the state-level variables, only the presence of a Senate race on the ballot is a highly significant (p<.001) determinant of undervoting. A Senate race increases the probability of undervoting in the presidential contest by about 0.34 percentage points on average. A

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[21] When excluding respondents who did not mark the presidential vote question, Table 3 indicates that only the 60+ age group is significantly more likely to report they had not voted.

[22] When excluding respondents who did not mark the presidential vote question, both groups with under $30,000 income are more likely to undervote.

[23] A nationally representative subset of the exit poll respondents received a longer questionnaire, which included a question on educational attainment. For these respondents only, area population was also recorded. With only 47 undervoters in this subset, however, no reliable analyses can be conducted.

gubernatorial contest on the ballot—which was associated with a somewhat greater likelihood of undervoting in Table 2--has no significant impact on the probability of undervoting, controlling for other variables.

A likely reason that Senate contests mattered more than gubernatorial contests in 1992 is that they were more competitive on average. In fact, the 34 senate races[24] had on average a lower margin of victory (signifying a more competitive race) than did the dozen gubernatorial races. The average margin in senate races was 16.4%, compared to 19.4% for governors' contests. Additionally, campaign messages emphasizing the much-touted "Year of the Woman" were effective in generating turn-out in senate elections, especially in the 12 elections involving women candidates, but "flopped" in gubernatorial races.[25]

Indeed, how close the margin was in the presidential race also mattered somewhat. There is some evidence that more competitive contests for a state's electoral votes reduce undervoting. This variable is significant only at the .08 level, however. A 10 percentage-point increase in the margin separating the top two vote earners (e.g. a 55%-40% split vs. a 50%-45% split) increases undervoting by 0.70 percentage points on average.

Neither the number of presidential candidates on the ballot, nor a straight-party voting option, influences the rate of intentional undervoting, for some of the same reasons cited in the bivariate analysis.

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[24] Louisiana is coded as not having a senate race in 1992. John Breaux won the Democratic primary, but then faced no competitor in the general election. California had two senate races—the average over all states is based on the more competitive California race, that involving Barbara Boxer

[25] See *Congressional Quarterly Almanac*, 1992, Washington, DC: Congressional Quarterly, p.31A.

5. Conclusions

This study is intended to contribute in three ways to our understanding of political behavior and to the policy of design of reforms in election administration. First, it complements the literature on determinants of roll off in lower contests on the ballot, by identifying factors associated with roll off, in the form of intentional undervoting, in presidential contests at the top of the ballot.

Second, the study helps to identify attainable goals for reducing the rate of voided ballots through innovations in voting technology and ballot design. We find that between 0.23% and 0.75% of voters intentionally skip the presidential contest. This rate will of course vary somewhat across jurisdictions, with variations in income, ethnicity and the age profile of the population, and with the presence of other contests on the ballot. Nationally, however, we can expect hundreds of thousands of voided ballots in future presidential elections, even if we (unrealistically) assume fool-proof voting technologies and ballot designs, and no errors in administering elections.

Finally, our study has implications for equal protection issues raised by the 2000 election in Florida and the subsequent court rulings. A possible explanation for the very high rates of voided ballots reported for some heavily African-American precincts is simply that African Americans voters intentionally undervote at much greater rates than white voters. We find no evidence to support this possible explanation, indicating that the discrepancy is attributable to differences in the frequency of errors. However, Knack and Kropf (2002) have shown that African Americans are no more likely than whites to live in counties using punch cards or other error-prone voting equipment. These findings, as well as results from Darcy and Schneider (1989) and Tomz and Van Houweling (forthcoming) and from cross-precinct studies within

punch card counties reported in the media,[26] strongly suggest that complicated voting machinery and confusing ballot design generate a higher frequency of accidental overvotes and undervotes among African American voters than among white voters. The allegation that punch card voting technology is discriminatory because it produces high error rates in poor and African American precincts has a long history (Hoffman, 1987: 70; FEC, 1982: 21). Further research should investigate the extent to which such differences are attributable to African American-white gaps in average educational attainment, educational quality, voting experience, or other factors, rather than intentional undervoting.

We find some evidence that older and poorer voters intentionally skip the presidential contest at higher rates. These differences should be taken into account in assessing the possibility that elderly voters, for example, may make more mistakes in voting, particularly with punch-card systems, due to poor vision or decreased manual dexterity (Shocket et al. 1992). Even for older and poorer voters, however, the rate of intentional undervoting appears to be 1.5% or less.

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[26] See "Racial Pattern in Demographics of Error-Prone Ballots," *New York Times*, 29 November 2000; "A Racial Gap in Voided Votes," *Washington Post*, 27 December 2000; "Florida Ballot Spoilage Likelier for Blacks: Voting Machines, Confusion Cited." *Washington Post*, 3 December 2000.

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Table 1
Intentional Undervoting, NES Data 1980-2000

Year	Voted for President	Didn't vote for President	Percent undervote
2000	1178	4	0.34%
1996	1160	15	1.29%
1992	1689	8	0.47%
1988	1227	7	0.57%
1984	1449	14	0.97%
1980	996	8	0.80%
total	7699	56	0.73%

From question "did you vote for a candidate for President," asked only of NES respondents who indicated they voted in the November elections.

Table 2
Intentional Undervoting, VNS Exit Polling Data, 1992

Sub-sample	n	Undervote %
All respondents	54806	0.77%
White	44707	0.73%
African American	6567	0.82%
Latino	1778	0.64%
Asian	622	0.94%
Other ethnicity	671	3.00%
Income < $15,000	8228	1.54%
Income $15-$30,000	13427	0.79%
Income $30-50,000	14912	0.40%
Income $50-75,000	9165	0.41%
Income > $75,000	5071	0.33%
Age 18-24	5719	0.59%
Age 25-29	5673	0.48%
Age 30-39	13800	0.45%
Age 40-49	12769	0.63%
Age 50-59	7374	0.98%
Age 60+	9182	1.32%
Democrat	22019	0.69%
Republican	16418	0.52%
Independent/other	14200	1.06%
Senate contest	38232	0.90%
No Senate contest	16574	0.48%
Gubernatorial contest	11487	0.93%
No Gubernatorial contest	43319	0.73%

From VNS exit poll question "In today's election for President, did you just vote for: Bill Clinton/George Bush/Ross Perot/Other/Didn't vote for President."

Table 3
Logit Regressions of Individual Factors Affecting Intentional Undervote

	Coefficient (standard error)	Odds Ratio	Marginal Effects
Constant	-5.48 (0.74)	--	--
African American	0.21 (0.20)	1.23	0.17%
Hispanic	0.07 (0.33)	1.07	0.04%
Asian American	0.23 (0.56)	1.25	0.13%
Other ethnicity	1.44 (0.24)**	**4.20**	**1.59%**
Age 50-59	0.58 (0.16)**	**1.79**	**0.37%**
Age 60+	0.73 (0.13)**	**2.07**	**0.48%**
Income < $15,000	0.30 (0.17)	1.35	0.17%
$15,000-$30,000	-0.32 (0.17)	0.73	-0.15%
$30,000-$75,000	-0.95 (0.16)**	**0.39**	**-0.48%**
Democrat	-0.08 (0.15)	0.93	-0.04%
Independent	0.53 (0.15)**	**1.70**	**0.31%**
Chi square	311.25 (p<.0000)	--	--
Pseudo R^2	.07	--	--

Dependent variable=1 for VNS exit poll respondent reporting that they did not vote for President (or skipped the question), = 0 for respondents reporting they did vote for a presidential candidate. Standard errors are adjusted for possible heteroskedasticity and non-independent errors within states. Here the marginal effect is the effect of a one unit change in the independent variable on the probability of undervoting, holding all other variables constant at their means. Number of observations is 52,969.

Table 4
Logit Regressions of Individual and State Factors Affecting Intentional Undervote

	Coefficient (standard error)	Odds Ratio	Marginal Effects
Constant	-5.83 (0.39)	--	--
African American	0.16 (0.25)	1.17	0.10%
Latino	0.06 (0.36)	1.06	0.04%
Asian American	0.22 (0.49)	1.25	0.15%
Other ethnicity	1.38 (0.33)**	**3.97**	**1.67%**
Age 50-59	0.59 (0.13)**	**1.81**	**0.43%**
Age 60+	0.77 (0.14)**	**2.15**	**0.58%**
Income < $15,000	0.30 (0.18)	1.35	0.19%
$15,000-$30,000	-0.31 (0.18)	0.73	-0.53%
$30,000-$75,000	-0.95 (0.17)**	**0.39**	**-0.53%**
Democrat	-0.06 (0.16)	0.94	-0.03%
Independent	0.53 (0.14)**	**1.70**	**0.35%**
Senate contest on ballot	0.65 (0.24)**	**1.92**	**0.34%**
Gubernatorial contest on ballot	0.13 (0.20)	1.13	0.07%
No. of presidential candidates	0.03 (0.04)	1.03	0.02%
Margin of presidential contest	.012 (.007)	1.01	0.007%
Straight ticket vote option	0.01 (0.16)	1.01	0.06%
Chi square	276.3 (p<.0001)	--	--
Pseudo R^2	.05	--	--

Dependent variable=1 for VNS exit poll respondent reporting that they did not vote for President (or skipped the question), = 0 for respondents reporting they did vote for a presidential candidate. Standard errors are adjusted for possible heteroskedasticity and non-independent errors within states. Here the marginal effect is the effect of a one unit change in the independent variable on the probability of undervoting, holding all other variables constant at their means. Number of observations is 54,806.