

Closing the Gap in State Legislative Races:

The Effect of Campaign Spending on Ballot Drop-off

by

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Abstract

This study advances research in the area of ballot drop-off in local elections. Related research has pointed to a lack of information on down-ticket races, leading voters to not fill out their entire ballot. But the issue has never been directly tested at the state legislative level. Publicly available campaign finance information and election turnout results were used to test the collective and individual effects of various campaign expenditures. The results show that overall campaign expenditures have a statistically significant effect on reducing ballot drop-off, but specific types of expenditures do not.

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Introduction

All political campaigns face the daunting task of deciding how to best allocate their limited resources to improve their chances of winning. This involves a calculated financial investment in a range of communication techniques to persuade voters and turn them out to vote. Legislative races, which are small and located down the ballot, must account for relatively lower turnout compared to the top of the ticket. The phenomenon of lower turnout for races down the ballot (i.e. state legislative seats, municipal elections and ballot measures) from those at the top of the ballot (presidential, congressional and gubernatorial) is often referred to as ballot “drop-off”. Each one of those voters who fails to fill out their complete ballot is a missed opportunity for a legislative vote. This is particularly true for Democrats, who tend to win more when turnout is higher.

In 2012, all legislative races in Oregon had lower voter turnout in their district than the presidential race. Without proper evidence of what causes this, campaign practitioners tend to think this effect is caused by an information gap between the top of the ticket, where money spent and media coverage is greater, and the down ballot races. In addition, down ticket races see these drop-off voters as their best chance to increase relative turnout, because the person has already been convinced to turn in their ballot. To win, legislative candidates must account for drop-off and build a strategy to close the turnout gap. This research seeks to advance knowledge of campaign spending and prove that increased spending decreases ballot drop-off. In addition, it will take a look at individual expenditure types to weight the value of one approach over another.

During the 2012 election cycle in Oregon, competitive legislative races consistently saw combined spending above \$1 million (ORESTAR). This reflects the high stakes nature of these races as political forces grapple over control of the legislative branch. In Oregon, limits on campaign expenditures have taken a back seat to transparency, leading to legislative races that are among the most expensive in the nation. However, spending decisions at the local level often depend on lessons learned in larger races. With limited resources and small sample sizes, experimentation is not an option. Consultants and staff often have a background in larger campaigns, so local races become a scaled down version of those efforts. There are no guarantees with these approaches, just the assumption that voters will react the same to the same treatments. But we already know that this is not true, particularly with fringe voters, as evidenced by ballot drop-off.

As a campaign practitioner since 2009, I have seen first hand the tough decisions the senior campaign staff face in running a successful local election. The outcome of these races matter, as control of legislative chambers can significantly affect the future of a wide array of priorities for partner groups and stakeholders. Ballot drop-off in local campaigns is seen as an enigma that must be overcome, but without a clear path to do so. Closing this gap in turnout is seen as the best shot to increase turnout at the local level. Without reliable research on the topic, millions of dollars are poured into campaign strategies hoping that the perfect combination of communication will be obtained and result in victory at the ballot. Once the dust has settled, campaigns often move on to the next cycle, without putting significant thought into exactly how victory or defeat was achieved. There is too much money spent and too much at stake to simply guess at the value of campaign expenditures.

Literature Review

Gaps in research at the state legislative level often relate to a lack of reliable data available in smaller districts and the widely varied organizational structure of legislative bodies from state to state. A part of this problem was remedied in 1987 by the Inter-university Consortium for Political Science Research (ISPSR) with the creation of a database with state legislative election results from 1968 to 1986 (Carey et al., 2000). However, barriers to analysis at this level continue to be considered “severe” by researchers (Austin et al., 1991). In addition, turnout in state legislative elections is not seen as a significant variable in analyzing races at other levels. Focus on these races has increased as research findings for congressional, gubernatorial and other larger races are applied to the local level.

Voter participation rates have been a main focus of research around American politics for decades. Across the United States, turnout in elections is low compared to other western democracies. This lack of participation creates questions about the legitimacy of government. Historical election results have shown consistently that turnout rates are even worse at the state and local level (Oregon Elections Division). New trends in controlled experiments have led to more precise measurements of the turnout effect of various campaign activities (Green and Gerber, 2000). More specifically, research has shifted towards analyzing the most effective medium of communication to increase turnout. However, some of these efforts remain private as practitioners jockey to gain a competitive edge in high stakes elections.

Existing research has shown that money impacts campaign outcomes and contributes to voter participation. This effect has been proven highly significant at the state legislative level (Hogan 2013). However, long before this was proven through published research, the assertion

that money affects outcomes had become an axiom in campaigns. Money is a finite resource, so practitioners are more interested in what specific types of expenditures are likely to increase vote share and turnout. There is a gap in the literature when it comes to the effects of individual types of expenditures, as compared to others. This could be due in part to the difficulty in obtaining data on the breakdown of specific expenditures within a campaign. Campaigns do not share information on strategies unless forced, as this experience is usually shared within parties or organizations in the hope of a better outcome in the future. In Oregon, candidates are forced to report detailed information on expenditures to the Secretary of State, making this analysis possible.

Empirical research and controlled experiments have shed light on the turnout effects of individual campaign actions. Direct voter contact — also known as “field” — efforts by campaigns, have proven to be a relatively inexpensive, but important, way for local campaigns to persuade and turn out voters (Green and Gerber, 2008). Face-to-face contact at the doorstep has been shown to increase turnout by nearly ten percent. In addition phone calls have a smaller, but statistically significant effect (Gerber and Green, 2000). Campaigns across the country have adapted more “grassroots” activities into local campaign activities and expenditures. An added benefit of direct voter contact is that it often contains an element of volunteerism, which is free outside of management costs. Many local races rely on volunteers who donate time for free to walk various neighborhoods.

More traditional forms of voter communication like direct mail, in general, may affect turnout by around 1 percent (Green and Gerber, 2003), but others have concluded that the effect of mail may have a greater impact on changing the vote share of a candidate among voters who

were already going to cast a vote. Television advertising has been shown to have a mixed effect on turnout. Some research suggests that television causes a substitution effect away from other forms of media, leaving people less informed and reducing turnout (Gentzkow, 2006). Other results suggest that turnout effects may exist, but in larger media markets a disproportionate level of attention will be paid to higher profile races, drowning out turnout on down ballot races (Althaus and Trautman, 2006). There is a gap in the literature when it comes to comparing the different effects of these expenditures within a given campaign budget. In the real world, decisions must be made about the relative advantages of one expenditure over another, which will be informed by the effects on turnout and persuasion.

While research on general turnout is helpful to state legislative races, not all turnout is created equal. These studies have begun to form a model for how campaigns can increase voter participation, but considerably less emphasis has been put on applying these results directly to legislative races that constantly receive lower turnout than the top of the ballot. The data collected for this research paper shows ballot drop-off in all legislative districts, with no exceptions. So this is an issue that affects literally every down ticket race.

Studies on contributing factors to drop-off have been helpful to frame what may cause the problem, but scholarly research has not tackled it head on. There remains significant speculation about the true causes. This research paper seeks to bring together many of the ideas about voter turnout, campaign expenditures and ballot drop-off together to apply them specifically to ballot drop-off in state legislative races. By using a data set unique to Oregon, where all individual expenditures made by legislative candidates are reported, analysis of the overall impact of money on drop-off as well as the individual effects of various campaign activities within legislative

campaigns can be seen. This can address questions that plague campaign practitioners for any down ballot races: What specific campaign activities contribute to reducing the ballot drop-off from the top of the ticket and proportionally increasing turnout?

Answering this question could have profound effects on campaign strategy at the local level. The concept of coordinating campaigns of various sizes could be advanced and campaign expenditures patterns could be changed. If spending money on a specific campaign activity to improve turnout is ineffective, perhaps emphasis will be shifted to other activities like voter persuasion. This research will fill an important gap in literature on state legislative races and local elections in general.

A Deeper look at Ballot Drop-Off and Turnout

Undervote — which is highly correlated with and often conflated with ballot drop-off — is the number of votes that are not cast for a given race on a ballot. In other words, the number of ballots in which the race was left blank. Undervote for the presidential race in Oregon was less than one percent in 2012, while other races suffered greater —but varying— degrees of undervote depending on their size (Oregon Elections Division). If there is not a presidential candidate, similar results exist for whoever is on the top of the ticket. This is consistent throughout historical election results and has led to the widely accepted conclusion that, in general, turnout is driven by the largest, most high profile race on the ballot.

The study of ballot drop-off is focused on what causes individuals to fail to vote down the ticket. Research has shown that there are coattail effects that increase turnout for down ticket races, as turnout increases for the top-of-the-ticket (Hogan, 2005). These effects are particularly

pronounced when competitive races are taking place. In general, rates of turnout are higher during presidential election years than mid-term elections. This is due in large part to the high profile nature of these races and the higher rate of participation by less committed voters. Studies have shown that rates of change in turnout for top-of-the-ticket races during non-presidential years, compared to turnout in presidential years, are approximately the same in magnitude for legislative races (Austin et al., 1991). This means that while overall rates of turnout fluctuate, the proportional rates of drop-off between the top of the ticket and legislative races remains consistent. This consistency points to systemic reason for drop-off. But what causes this?

Analysis of ballot drop-off has been most closely studied at the judicial level. Results have indicated that the turnout may have less to do with socioeconomic considerations, and more to do with election characteristics like closeness of the race and the type of election (Johnson and Younger, 2008). These results are closely related to studies on “low information” elections. As voters move to down ballot races, they face increasing barriers to decision making that can lead them to leaving a race blank. The addition of information as basic as partisan affiliation has shown to be significant in impacting results (Klein and Baum, 2001).

The phenomenon of ballot roll-off is a bit paradoxical, because of all the barriers that have already been overcome to cast a ballot. Anthony Downs created a model for the calculus of voting that said the reward of voting was equal to the benefits of winning, multiplied by the probability that it is a deciding vote, subtracted from the costs of voting (1957). Seeing this model as overly simplistic, Riker and Ordeshook tweaked it further by adding in the concepts of civic duty and voter satisfaction. When applied to the concept of voter roll-off, this raises a question about the utility (or lack-there-of) of local races (1970). Proximity to voting location,

transportation, legal restrictions and other barriers to voting are no longer a factor once the voter is already filling out the ballot. The Downs — and later Riker and Ordeshook — model suggests that total votes cast can be seen as an aggregate measure of the value of a race, and down ballot races seem to consistently provide a lower level of reward to voters than up-ticket races.

Research points to three main theories of what causes ballot drop-off. The first is a lack of significance or salience that leads a voter to abstain from voting. It is well established that if voters are unsure of candidate names or duties of a given office or feel that an office is insignificant, they are less likely to have strong preferences (Burnham, 1965). This represents the idea of a voter information “gap”. During most elections, the greatest amount of money, visibility and attention goes to the races at the top of the ballot, causing down ballot races to be drowned out. Voters are therefore exposed to less discussion about the candidates and the office they seek, leaving them less informed and less likely to identify a purpose in voting for the position.

With each step down the ballot, budgets tend to get smaller, and voter information on the race decreases. The limited exception to this may be a turnout effect that can be found in down-ballot gubernatorial races during years when a presidential race is up the ticket (Boyd 1986; Hill and Leighly 1993, 1994). However, these races are statewide, well-funded and heavily covered by the media, making them fundamentally different than legislative races. In 2012, the recall election for the Wisconsin Governor’s race topped nearly \$80 million in campaign spending¹. In these situations, budgets allow candidates to perform like a top-ticket race because they’ve seemingly bought their way out of the information gap. Legislative races are substantially

¹ <http://www.cbsnews.com/news/a-record-amount-of-money-spent-on-wisconsin-recall/>

smaller and receive less media attention. The money raised by these candidates is spent in smaller districts, making comparisons of per capita spending more relevant than aggregate spending, but the difference in spending is still significant. Legislative races cannot keep pace and their message struggles to reach voters. Some evidence shows that even highly competitive state legislative races are unlikely to reach voters (Jackson, 1997).

A second explanation is a concept called “voter fatigue”. While some researchers use this term interchangeably with the term roll-off, others use it to describe the contributing factors that make a voter “grow tired of the process before completing a long ballot,” (Bullock, 1996). For the purposes of this paper, I will be using the latter definition. Some of the contributing factors to fatigue include proximity to a polling place, issues with childcare, long lines to vote, weather, emergencies and more. However in Oregon, many of these barriers are reduced by the vote-by-mail system which could have a positive effect on turnout for down ballot races. As Priscilla Southwell finds, the extra time allowed for decision making can help vote by mail formats work “to facilitate voter participation for ballot measures or other less visible contests,”(2009). While questions still remain about how much this affects voters who are not motivated to vote in the first place, the vote-by-mail system in Oregon makes fatigue in local elections a less cogent argument for why drop-off occurs.

A third explanation for drop-off is confusion at the ballot. This can be caused by something as simple as not realizing there was a second side to a ballot. Previous research by Nicholson showed that lowering a ballot proposition 10 slots on a California ballot increased roll-off by over a percentage point (2007). Bowler Donovan and Happ find that “under

preferential systems or where a large number of elective offices and/or propositions are on the ballot, the decisions facing voters are quite complex,” (1992).

With the system of vote-by-mail in Oregon, the impact of the information gap and saliency are likely the strongest factors in affecting ballot drop-off for down-ballot races. With the increasingly advance communication and targeting techniques of modern campaigns, campaigns are focusing more on communicating the right messages to the right people in an effort to close this gap. While there is an expectation of strong correlation between the total amount of money spent on campaigns and turnout, the optimal distribution of funds remains unclear.

Data

In Oregon, it is possible to obtain data on campaign spending through an online database managed by the Secretary of State called ORESTAR. State laws governing transparency in elections require all candidates, ballot measure campaigns and political action committees to report any expenditure or contribution. The nature of the financial interaction is made publicly available if the value transaction exceeds \$100 during a calendar year. Even if the original transaction is below the limit, once a transaction is performed by the same entity in that calendar year to push the total over \$100, all transactions are displayed. Any amount below this for a given year, and the amount shows up as a miscellaneous expenditure (or contribution). With the focus of this research on major campaign communication expenditures, nearly all relevant information is above this threshold and publicly available.

The full history of contributions and expenditures can be exported for each campaign committee. Publicly disclosed information includes the payee, recipient, amount, transaction date, and nature of the transaction. The amount of information displayed for each transaction makes it easy to identify the purpose of the expenditure and classify it for the purposes of this research. Well over 20,000 individual expenditures for the 2012 election cycle were categorized based on their descriptions into the variables of interest described below.

In addition to financial information, demographic information was obtained from the American Community Survey, conducted by the census bureau and available from census.gov. This provided information on educational attainment and racial statistics. The Oregon Secretary of State's website provided all data collected on registration and historical election results. Total presidential turnout by state legislative district was not readily available, so the precinct level information was obtained directly from the secretary of state's office and summed by district.

Methodology

To analyze my hypothesis I ran two multivariate regressions on data from the 2012 election cycle in Oregon. Candidates begin spending money during the year preceding the election to maintain or establish name recognition and traditionally spend a few weeks following the election to pay off campaign debts that were incurred prior to the election day. Therefore, all expenditures during the period between January 1, 2011 through December 31, 2012 have been included in the model.

Consistent with the focus of this research, the endogenous variable will be ballot drop-off in both regressions. In the first regression, I will analyze the impact of total expenditures on

ballot drop-off, while controlling for factors that have been proven to affect overall turnout in previous research. Money has been shown to increase turnout in state legislative races (Hogan, 2005), but its effects have not been applied directly to ballot drop-off, making the first regression an important step in establishing correlation between money and the magnitude of drop-off. Total expenditure was expected to have a negative sign on its coefficient because it would reduce drop-off.

The original equation for the regression is as follows:

$$\text{Drop-off} = B_1 + B_2 \text{Registration} + B_3 \text{Education} + B_4 \text{White} + B_5 \text{Competitive} + B_6 \text{Incumbent} + B_7 \text{Unopposed} + B_8 \text{Third} + B_9 \text{Total Expenditure}$$

In the second regression, I sought to explain the advantages of individual expenditures by showing their impact on drop-off, while controlling for the same variables as in the first model. Essentially, instead of testing overall money spent on drop-off, I broke up the expenditures into categories. This approach could be particularly meaningful in the formation of campaign plans as practitioners are always searching for the most effective use of funds.

The original equation for this regression will be as follows:

$$\text{Drop-off} = B_1 + B_2 \text{Registration} + B_3 \text{Education} + B_4 \text{White} + B_5 \text{Competitive} + B_6 \text{Incumbent} + B_7 \text{Unopposed} + B_8 \text{Third} + B_9 \text{Television\&Radio} + B_{10} \text{Field} + B_{11} \text{Online} + B_{12} \text{Polling} + B_{13} \text{Professional} + B_{14} \text{MiscAdvertising} + B_{15} \text{Newspaper}$$

Endogenous Variable

The drop-off variable will be calculated by subtracting legislative turnout from the turnout for the presidential race. That amount will be divided by the total number of registered

voters to make it proportional to the size of each individual legislative district, where registration can vary. But, it is important to properly define the drop-off variable in the context of the 2012 election.

The top of the ticket was the presidential election between Democratic President Barack Obama and Republican challenger Mitt Romney. When looking at the pull of the top of the ticket and its implications for down-ballot races, there could be two effects that appear to conflict when it comes to the size of the drop-off. The first is that higher general turnout due to the presidential election could increase the undervote by increasing the number of inconsistent voters that return their ballots. These voters might be drawn out by the presidential race, but be generally less informed and subsequently contribute to the undervote by leaving down ballot races blank. The second effect is that the overall increase in turnout at the top could increase total turnout down ballot, despite the fact that the undervote could be larger. If total turnout increases, than this is good for a down ballot race, regardless of the size of the undervote. Similar effects could result from variations in the total number of registered voters in each district.

These effects are why it is important to control for the size of the district. Without it, district size could bias the outcome of the model.

Exogenous Variables

Expenditure variables overview

The data on campaign spending obtained from ORESTAR will be separated into eight categories: television and radio advertising; direct mail; direct voter contact; online advertising; polling; professional expenses; miscellaneous advertising; newspaper and periodical advertising.

These expenses comprise the major components of a modern campaign. In addition, total expenditure will be calculated from all available data. We know from previous research that total campaign spending is significant in increasing overall turnout, but this has not been applied directly to drop-off. In addition, the separated expenditures will allow us to see if any type of campaign spending has more impact than another.

Campaign expenditure descriptions in ORESTAR can vary, so classification of variables came from taking expenditures across campaigns and lumping them together into categories. These categories were then added up for all candidates in the district who reported expenditures. Since drop-off is hypothesized to be directly impacted by the information gap, the assumption is that all campaign activity in each category in a given district would contribute to raising the profile of the race. It would therefore not matter which candidate spent the money, so there is no variable related to party affiliation.

Since the descriptions were written by the filers themselves, at times the description was very clear and at others it was more vague. Between the filing category, expanded description and what business the expense went to, almost every one of the over 20,000 observations was classified easily. There were a few exceptions to this, where variables were classified under multiple categories in a way that made it unclear how the money was actually distributed. For example, an expense might be listed as, “TV buy and mailer.” To account for this, all of the nine variables categories were calculated as a proportion of total expenditure for the cycle. That ratio was proportionally applied to the expenditure based on all of the categories it could fit into.

Expenditure variables descriptions

The television variable included anything related to the production of TV advertisements or the actual purchase of airtime. This variable includes radio advertising as well because ORESTAR classifies those expenses together. Direct mail includes all expenses related to printing and sending mail to voters. This includes postage and any production costs specifically attached to mail, flyers and stock cards. Direct voter contact captured any expenses that were related to knocking on doors or calling voters over the phone. This included money spent to transport or feed volunteers, but left out expenses related to monthly phone service, which was seen as an office expense. In addition expenses for voter database systems, which are a function of field efforts, were included. Online advertising included all web-related activities used to promote the candidate. Websites, Facebook ads, Google ads, e-newsletters and email blasts were put into this category.

Polling includes expenses on conducting professional polls for the purpose of predicting election results or testing messages. Efforts made to identify voter preferences and persuade them through surveys was placed in the direct voter outreach category. Coding on this variable posed challenges, particularly for Republican candidates who would similarly classify both field surveys and polls. However, using all three categories, ORESTAR made variable assignment possible.

Miscellaneous advertising was a catch-all category that captured expenditures on promoting the candidate that didn't fall into other categories. These included expenses like lawn signs, billboards, buttons and bumper stickers. Newspaper and periodical advertising included any printed ads in newspapers, weeklies, or programs.

The final, and perhaps most complicated, expenditure variable was professional expenses. Extensive research has gone into testing the significance of professionalism within legislatures. However, researchers struggle with how to measure the component parts that make up professionalism (Carey et al., 2000). In addition, analysis of professionalism is most often used when looking at cross-sectional data across states, and is directed at the professionalism of the chamber itself. Looking at the level of professionalism within individual campaigns is even less easily quantified.

In this study, the goal was to capture money spent on staff and consulting, which make a campaign more professional and sophisticated. Research has shown that professionalism in the legislature can impact campaigns (Abbe and Herrnson, 2003). Staff and consulting certainly give candidates a significant advantage over those who don't have them, assuming the advice and work is productive, on average. The challenge in this variable is that staff and consultants affect every other aspect of the campaign. Examples include the ads that are designed by consultants and the number of volunteers that are recruited by staff to contribute to field efforts. Sometimes these efforts were expensed along with the product and other times they were singled out and billed separately. I would expect this variable to be highly correlated with the other variables in the model.

Control variables

To account for the impact of district size, I controlled for the total voter registration in the district. This is accounted for in the dependent variable by making drop-off a percentage of total presidential turnout. However, district size is likely to impact the right-hand-side variables by affecting the amount of money spent to reach the amount of voters needed to win. Some districts

are much larger and therefore they have larger target universes. In some variables like television, this might be irrelevant because media markets do not follow district boundaries. However, when it comes to certain expenditures where volume dictates price, like direct mail or direct voter contact, it is likely to impact total amount spent.

To show the true effect of expenditures on drop-off, a variety of demographic factors within the district needed to be controlled for. Education and income have both been shown to be positively correlated with turnout, but have never been tested directly against drop-off. Given their affect on turnout, controlling for them in the model was important.

Another factor in legislative voter turnout is the competitiveness of a given district. This is widely acknowledged as a predictor of things like media coverage and ultimately, money spent. Factors that relate to a district being competitive include the demographic makeup of the district and the registration advantages of a given party. These tend to remain approximately the same over time, allowing for past district results to be a great predictor of future competitiveness. The variable in this model is a dummy variable with a value of one if the race was decided by less than 10% of the final vote share in one of the last two cycles, and zero if it was not. Since investment can vary based on a variety of factors in any given cycle, the previous two cycles were used to capture a more accurate assessment of whether a district is potentially competitive.

A significant amount of literature has been published on the advantages of incumbency. It has been widely agreed that incumbents have higher rates of re-election (Uppal 2008; Troustine, 2009). There is less agreement about exactly why. Some argue that incumbency ties into the idea of professionalism, and that incumbents are more likely to understand how to strategically use resources to win (Troustine, 2009). Others argue that there are a multitude of mitigating factors

like district size, term length and electoral formula that significantly impact the value of incumbency (Carey et al., 2000). This research tends to focus on margin of victory, rather than on direct turnout effects of incumbency. One could argue that the true impact of incumbency is on how competitive a race may be, which would ultimately impact drop-off rates.

Results

Regression 1

The results of the first regression can be seen in Table 1, below. This was a baseline model for this research in establishing that overall expenditures by state legislative campaigns are related to variations in drop-off. All right-hand-side variables in this final model achieve statistical significance at the 5% level (represented by T-statistics above 1.96, which is the critical value at the 5% significant level). The R-squared value shows that this model predicts approximately 80% of the variation in drop-off, which is a shockingly large number in political science research.

Table 1

OLS Regression of Drop-off on District Controls and Total Expenditure - Regression 1

Independent Variables	Coefficient	Standard Error	T-Stat	Standardized
<i>Constant</i>	0.0601	0.0428	1.40	
<i>Registration (Thousands)</i>	0.00425	0.0011	3.89	0.285
<i>White</i>	-0.139	0.0563	-2.49	-0.186
<i>Unopposed</i>	0.141	0.0106	13.20	0.804
<i>Third Party</i>	-0.0311	0.0097	-3.21	-0.191
<i>Total Expenditure (Thousands)</i>	-2.76E-05	1.41E-05	-1.96	-0.1294916
<i>N = 60</i>	<i>R2 = .819</i>			

The most important outcome for this study was that total expenditures (represented in thousands) were exactly statistically significant. The coefficient also achieved a negative sign which indicates that as campaign spending increases, ballot drop-off falls. This provides evidence that campaign activities at the local level do break through the noise of larger campaigns, despite previous research that had shown a drown-out effect.

The coefficient for district registration had a positive sign, showing that as overall levels of registration go up, there is a greater likelihood that drop-off rates increase. This result seems intuitive on some level, because in districts with greater voter registration, more votes are likely to be cast and there are more possible voters to drop-off. Prior to running the regression, I would have assumed that characteristics of districts with lower registration numbers like minority populations, lower income and lower turnout in general, would lead to greater drop-off. These appear to have less of an impact than sheer size of the district. The regression results point to a more straightforward interpretation of larger registration numbers simply adding to the number of possible drop-off voters.

The variable accounting for racial composition had an interesting result. It had a negative coefficient, meaning that higher numbers of white voters leads to larger drop-off rates. This is counter to previous research that shows minority populations turnout at lower rates. However, this result makes sense when the make-up of Oregon's house districts is considered. The Portland metro area is a liberal haven in Oregon. Education rates and income levels are very high and diversity is extremely low. Democratic registration advantages rise to over 50% of all registered voters in some districts, resulting in almost no competition in those areas. Based on the hypothesis that competition is related to drop-off rates, this could cause the presence of high

concentrations of white voters to increase ballot drop-off. Essentially, it is a result of a lack of competition, rather than of racial makeup.

The variable representing an unopposed race was highly predictive of increases in drop-off. With evidence of overall campaign spending impacting drop-off, this result would be expected. In races where someone is unopposed, there is literally no competition. In this situation, candidates spend next to no money and voters are less likely to see a compelling reason to cast a vote for a race that is already decided.

A variable representing the opposite extreme of an unopposed race was the presence of a third party candidate. This coefficient was negative, showing evidence that a third option lowered drop-off rates. This makes intuitive sense in that voters are given more options. Perhaps these seats capture more fringe voters who may identify with minor parties. While this result shows a statistically significant affect on drop-off, when applied to the real world it is not a helpful finding. For the two major candidates in the race, a third candidate would change their vote-share but not increase their turnout. In other words, it does not increase the number of people voting for a major candidate, it just increases overall turnout in the contest. There was evidence of a couple important third party candidates in this cycle that may have swung the final results. How this shift in vote-share is achieved does matter, but is outside the scope of this research paper.

There were some surprising results of variables that ended up being statistically insignificant. Incumbency showed almost no significance, and didn't make it into the final model. This was perhaps a result of the variety of levels of competition faced by incumbents in 2012. This election cycle saw many Democratic challengers in swing districts go head-to-head

with Republicans who had won their seats during the 2010 republican-wave election. These became some of the most competitive seats in the state. Meanwhile, other incumbents saw easy races in seats that were less competitive. The combination of these factors could have led to insignificant results.

The most shocking result was that competition in the district was one of the least significant variables in the model. Perhaps, this can be explained by its predictive power being picked up by too many other variables, leading to high levels of correlation that blew up its standard errors. Intuitively, competition in the district helps explain much of the interaction and flow of money that is evident in the model. It is possible that there are other ways to represent competition that could have created a significant result. The variable in this model used previous election outcomes as a predictor for how competitive a district was. In a future study, it might make more sense to represent competition by total money spent, or other factors.

Regression 2

The second regression was essentially the same as the first, but with the total expenditure variable split up into its component parts. Unfortunately, it did not yield significant results that can shed much light on which specific campaign expenditures have the greatest impact in reducing ballot drop-off.

Control variables that achieved significance in the first regression were carried over into the second regression. These included racial composition of the district, voter registration numbers, third party candidates and if the seat was unopposed. These variables remained significant in the new model, but the none of the individual expenditure variables was close to statistical significance. One would expect that all of these expenditures would, in theory, raise

the profile of the race and help reduce the undervote. However, the significance level was low enough on all variables that there is no evidence that it was occurring (or worth reporting).

The biggest issue with the second regression model is that all the variables were highly correlated with one another. This correlation between variables can be seen in Table 2, below. Some were correlated up to 70 or 80 percent. This amount of collinearity causes the standard errors to balloon, and leads to insignificant results. This could have been caused by spending amounts in the given areas moving in similar proportion as overall levels of spending increased, leading to inconclusive results based on variation. This also could be an issue with a lack of usable data points. Not all campaigns spent in every category, particularly when it came to non-competitive races. This meant that some variables had twenty or more observations that were zero. Finally, it could be a reflection of the difficulty in accurately splitting expenditures up into various categories. There were issues with overlap, as discussed earlier in the paper, that could lead to inconclusive results.

Table 2

Correlation between campaign expenditure variables

	Broadcast	Field	Direct Mail	Advertising	Newspaper	Online	Polling
Broadcast	1.000						
Field	0.9481	1.000					
Direct Mail	0.9253	0.8579	1.000				
Advertising	0.6613	0.5661	0.7722	1.000			
Newspaper	0.4408	0.4006	0.4206	0.3851	1.000		
Online	0.8133	0.7690	0.7736	0.5982	0.2939	1.000	
Polling	0.8641	0.8240	0.9091	0.7982	0.4175	0.6965	1.000
Prof	0.7710	0.7253	0.7828	0.5591	0.3361	0.6921	0.7213

Conclusions

These findings suggest that the activity of state legislative campaigns reduces the problem of ballot drop-off. This is significant for both researchers and practitioners in two main ways. First, it joins previous research in showing the effect of campaign spending on overall turnout for state legislative candidates. As stated above, it gives hope that campaign activities at the local level do break through the noise of other races, despite previous research that showed a minimal effect. Second, it takes a step in suggesting ways to close the gap with top-ticket, higher profile races. This is particularly of interest to candidates who are attempting to ride the coattails of popular candidates. For example, in 2008 many Democrats wanted to ride President Barack Obama's wave of momentum. This research shows that closing the gap on those races is possible.

Unfortunately, the findings were inconclusive when it came to individual types of expenditures. I would suspect that this result has more to do with the collinearity between variables and a lack of data points than evidence that these expenditures have no impact on ballot drop-off. Perhaps the addition of more election years would add enough data to help achieve more conclusive results.

With my experience in the field efforts of campaigns, I expected direct voter contact to have the greatest impact on reducing ballot drop-off. It has been proven in widely accepted studies to have significant impacts on voter turnout and vote share. However, this variable proved difficult to collect meaningful data on, because the total amount spent on field is not easily captured. Much of a campaign's field efforts is performed by staff and other expenses

might not be labeled directly as field. In addition, you cannot quantify the quality of contact or the number of contacts that were made.

There is still further research to do in this area. While this study showed that it is possible to reduce ballot drop-off, future research should focus on what types of messaging and tactics are most effective to maximize this result. This would be most valuable to practitioners in the real world. In addition, conducting this research across more elections cycles or in multiple states, would lead to more precise results.

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