

CAMPAIGN SPENDING ON ELECTION OUTCOMES

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Abstract

The goal of this study is to analyze the effects of campaign spending on the percentage of votes received for a candidate and the election outcome. This is achieved through correlating independent variables specifying the candidate's spending, candidate's characteristics, and state's characteristics on the dependent variable of either vote percentage for a candidate or wins and losses. Using Tobit regression analysis, for every \$1 dollar increase in campaign spending, the vote percentage received will increase by 6.77×10^{-7} . Using Probit regression analysis, for every \$1 dollar increase in campaign spending the probability of winning increases by 5.12×10^{-8} . Other variables such as the incumbent status of a candidate, celebrity status, party affiliation, scandals, percentage of registered voters in the candidate's party, state partisanship, state unemployment, and state population were included in the study to further analyze other factors determining the percentage of votes received and ultimately, the election outcome.

KEYWORDS: Campaign Spending, Election, Incumbent, Challenger, Politics

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Introduction

A popular debate in recent elections has been about campaign finance reform due to the rising costs of political campaigns. The costs of congressional campaigns have increased more than 500% since 1984, which has outrun the growth of inflation, health care and cost of college (OpenSecrets, 2016). In 2012, out of 467 congressional races held, candidates who out fundraised their opponents were nine times more likely to win elections with winning congressional candidates outspending their opponents by about 20 to 1 (OpenSecrets, 2012). However, the question of whether money helps win elections is widely debated by political experts. Many Americans think the answer is self-evidently yes, while others think of campaigns who spent lavishly such as Meg Whitman, Rick Perry, and Steve Forbes. The difficulty of finding the relationship between campaign spending and election results arise from the patterns of House and Senate election outcomes that continues to this day.

In general, money matters in politics, which is why politicians spend most of their time trying to raise funds in addition to trying to woo voters. Candidates can raise funds through a few different sources. A candidate can spend as much of their own money as they wish on their own campaign or raise money from individuals, organizations, and interest groups. However, donations from individuals, organizations, and interest groups have restrictions on how much they can give. Moreover, independent expenditures made by political action committees and other outside organizations have no limits because the independent expenditures are not direct donations to candidates but rather expenditures on the candidate's behalf. Candidates usually use most of these funds on campaign advertisements and hiring staffers to create campaign organizations to make their case

directly to the voters. Although many political scientists debate the impact of money on campaign success, money is still very important. The political scientist John Sides said, “The major debate is not over whether money matters, it is over the relative impact of incumbent and challenger spending” (Brooks, 2010). So, the question is: How does campaign spending have on the election outcome?

Thus, in this paper, I will analyze the impact of campaign spending on determining the results of an election using campaign finance and election results data of US congressional races from 1996 to 2012. I use regression analysis to determine the outcome of the election using distinct variables previously used by researchers studying this topic.

The outcomes of the relationship between campaign spending and election results bring important implications. If there is a relationship between campaign spending and election results, then there must be campaign finance reformation to have an even playing field for all candidates in an incumbent-challenger race or open-seat race. However, if there is no relationship, then the questions arise on what other variables actually determine the outcome of an election and what could all that money the candidate raised be actually for?

Although there is a plethora of academic research that studies the relationship between campaign spending and election results, most academic research is from 10 to 20 years ago that is referred to today but still widely disputed. This paper aims to renew the debate and shed some light on campaign spending determining election results. The first section summarizes the previous academic literature on the subject. The second section discusses the theory and creation of the model. The third section describes the data by

outlining the origins of the data and the limitations or questions regarding the data. The fourth section analyzes the data, which will either prove or disprove the relationship between campaign spending and election results. The fifth section concludes the study's findings along with further questions and suggestions for the future.

Literature Review

Over the past four decades, many academic scholars have attempted to measure the effects of spending on election outcomes. Most researchers view candidate spending as exogenous including Abramowitz, Ansolabehere (1998;1991), Grier (1989), Kenny and McBurnett (1992), and Levitt (1994). The established method in this literature is a regression of a candidate's vote level on the candidate's spending levels along with other variables relevant to the election outcome. However, basic differences arise among studies using alternative functional forms such as linear, quadratic, and logarithmic functions to convert spending into votes. Moreover, literature analyzes different types of campaigns such as House, Senate, and Presidential. In the earliest studies, researchers focused on the partisan differences and assumed the marginal effects of challenger spending and incumbent spending to be identical. However, when ignoring the assumption, the central conclusion of this literature arises: Challenger spending has much greater marginal return than incumbent spending; the marginal returns of incumbent spending are small and not statistically significant. Therefore, two schools of thoughts are present in the literature that dispute each respective finding for or against Jacobson and Green/Krasno.

Jacobson (1978) in his research analyzes the House and Senate Campaign spending data using both OLS and 2SLS regression models to be the first to conclude challenger spending has much greater marginal return than incumbent spending; the marginal returns of incumbent spending are small and not statistically significant. Jacobson (1985) summarizes most academic findings in the literature after his central finding in 1978: "The idea that the challenger's spending level is what matters for

election results is repeatedly supported. Indeed, it is supported by results from almost every set of elections where the question has been tested” (p. 18).

Jacobson’s (1985) conclusion can be explained theoretically for the effectiveness of challenger spending and ineffectiveness of incumbent spending. Jacobson (1985) explains that both the challengers and incumbents face diminishing electoral returns with campaign dollars. The incumbent has built in advantages before even spending the first dollar because of the incumbent’s staff, free mailing, campaign activity, and exposure to the voters (Jacobson, 1978; Jacobson, 1985). The incumbent spending more money garners no significant knowledge for voters because incumbents are already well-known to voters (Jacobson, 1978; Jacobson, 1985). Because challengers usually come from obscurity and are not well-known, they benefit from the money spent for campaign exposure (Jacobson, 1978; Jacobson, 1985).

Although Jacobson’s finding is central to the literature on campaign spending on election campaigns, researchers widely dispute Jacobson’s methodology and therefore his conclusion as well. Because of incumbents’ vote shares and spending being simultaneously determined, the cause of the negative correlation between incumbents’ vote shares and spending is the failure to control for unobserved incumbent and challenger quality. Jacobson not implementing important incumbent characteristics and district partisanship results in omitted variable bias, which Abramowitz (1988;1991), Gerber (1998), Green and Krasno (1988;1990) later correct for in their research by using instrumental variables and two-stage least squares analysis. Ansolabehere and Gerber (1994) investigate further the measurement of campaign spending by all researchers to see if the mismeasurement has any effect on the conclusion. Kenny and McBurnett

(1992) utilize a dynamic model of the relationship between campaign spending and votes to come to their own conclusion. Levitt (1994) disagreed with the methodology of all researchers and comes to his own conclusions with a unique methodology. Guis (2010) and Grier (1989) use past methodologies to come to their own respective conclusions as well.

Abramowitz (1988) used the outcomes of Senate elections between 1974 and 1986 to estimate the influence of a variety of factors including political characteristics of a state, characteristics of the candidates, and national political conditions that corrected Jacobson's omitted variable bias. Using ordinary least squares regression analysis and two-stage least squares analysis, Abramowitz found that characteristics of the candidates had the strongest influence on the outcomes of Senate elections (Abramowitz, 1988). In an incumbent-challenger model, an incumbent's record and the challenger's spending and qualifications from the characteristics of the candidates are significant factors influencing the outcome (Abramowitz, 1988). In an open-seat model, the relative experience and financial resources from the characteristics of the candidates were significant determinants of the outcome (Abramowitz, 1988). As a result, Abramowitz (1988) confirmed Jacobson's conclusion that when challenger spends more, the challenger receives more votes, however, when an incumbent spends more, the incumbent receives less votes. The two major consequences of Abramowitz findings are two-party competition has spread to every region of the US leading to no state being considered safe for either party and money being now important than ever for challengers and candidates for open-seats (Abramowitz, 1988).

Green and Krasno (1988) analyzes the 1978 House election showing three forms of model misspecification that causes Jacobson to underestimate the effect of incumbent expenditures: failure to control for the quality of the challenger, inattentiveness to interaction effects, and inadequate treatment of reciprocal causation. When fixing the model misspecifications, Green and Krasno conclude the marginal effect of incumbent spending to be substantial and, under certain circumstances, on par with the effect of challenger spending (Green & Krasno, 1988). Also, Green and Krasno add the challenger political quality to add the personal characteristics of the challenger, which is a strong determinant of the election outcomes (Green & Krasno, 1988). By using ordinary least squares analysis, instrumental variables, and two-stage least squares analysis, Green and Krasno come to their conclusions against Jacobson.

Kevin Grier (1989) analyzes campaign spending and Senate elections from 1978-1984. Through his research, incumbent expenditures have a positive and significant effect on votes. Literature of ordinary least squares analysis and two stage least squares analysis has degenerated into arguments about whose restrictions are the best (Grier, 1989). However, in his research both incumbent and challenger spending led to diminishing returns (Grier, 1989). Yet, incumbents can spend greater amounts more profitably than can challengers, which is why incumbents are against spending limits and public financing so incumbents can spend as much as they need to defeat their challengers (Grier, 1989). Thus, Grier (1989) confirms Green and Krasno's (1988) findings by confirming the positive significance of incumbent expenditures on votes.

Green and Krasno (1990) respond to Jacobson because Jacobson (1990) criticizes the findings of Green and Krasno, which argued that incumbent spending has sizable

effect on the house vote, on three grounds. First, Jacobson argues the instrument used in the two-stage least square analysis to measure incumbent spending is invalid (Jacobson, 1990). Second, Jacobson argues that Green and Krasno's model does not account for diminishing returns (Jacobson, 1990). Finally, Jacobson argues that Green and Krasno's model only holds for the 1978 election and no other subsequent years (Jacobson, 1990). Green and Krasno refute all of Jacobson's claims (Green & Krasno, 1990). However, Green and Krasno do not disagree with Jacobson on the marginal effect of challenger spending exceeding that of incumbent spending even though the yield of both incumbent and challenger spending to be on par (Green & Krasno, 1990).

Abramowitz (1991) tested a model of House election outcomes from 1986 and 1988 to explain the competition for House seats. Abramowitz adds the Congressional Quarterly Weekly Report ratings which forecasts the chances of each candidate to measure elite expectations (Abramowitz, 1991). Abramowitz concludes the increasing cost of House campaigns and the declining ability of challengers to raise campaign funds attributed to the low level of competition during the 1980s election (Abramowitz, 1991). In addition, the decline of House challengers of spending by more than 30% between 1980 and 1988 led to the lower rate of electoral return for challengers (Abramowitz, 1991). The findings presented clearly demonstrates again the importance of the challenger's spending as the determinant in level of competition and House election outcome (Abramowitz, 1991). Thus, Abramowitz confirms Jacobson's school of thought on the importance of challenger spending.

Kenny and McBurnett (1992) estimate a dynamic model of the relationship between spending and votes. Through their research, they could investigate which

expenditure schemes benefitted the candidate the most (Kenny & McBurnett, 1992). Kenny and McBurnett concluded that challenger spending is significantly significant while incumbent spending is not (Kenny & McBurnett, 1992). Thus, Kenny and McBurnett concluded Jacobson's school of thought.

Levitt (1994) examines the same two candidates facing one another on more than one occasion to avoid the bias of quality of candidates. Through his research, he concludes the effects of campaign spending having an extremely small impact on election outcomes (Levitt, 1994). Thus, Levitt is in neither Jacobson nor Green and Krasno's thoughts on incumbent and challenger spending.

Ansolabehere and Gerber (1994) studied the different effects of using total campaign expenditures to the amount of money actually spent on the campaign to see if the mismeasurement of campaign spending affected Jacobson's central conclusion. However, both conclude that measurement error of campaign spending is not the source for the result of incumbent spending mattering less than challenger spending (Ansolabehere and Gerber, 1994). Moreover, total spending understates the magnitude of the relationship between communication expenditures and votes and the key problem is finding a proper specification for the relationship between money and votes (Ansolabehere and Gerber, 1994). Finally, both conclude that challenger spending is a crucial determinant of the outcome of elections as well (Ansolabehere and Gerber, 1994). However, they believe conventional regression estimates are incorrect and misleading because the numbers in their opinion don't back up theoretical explanations and reality (Ansolabehere and Gerber, 1994). Thus, through Ansolabehere and Gerber's findings, I will assume that the data for campaign spending is accurately measured.

Epstein and Zemsky (1995) construct a signaling model in which incumbents can use fundraising strategically to deter challengers. However, through their research, there are only limited circumstances when there is an observable relationship between fundraising and challenger quality (Epstein & Zemsky, 1995). Goodliffe (2001) reinforces Epstein and Zemsky's research by using data from 1984-1988 US House elections to test whether large war chests deter high or low-quality challengers from entering a race with a probit model. Goodliffe (2001) also finds that war chests do not deter challengers but raised to meet a challenge. Through Epstein, Zemsky, and Goodliffe's findings, I will assume that large war chests do not deter challengers from entering an election.

Gerber (1998) estimates the effect of campaign spending on senate election outcomes using instrumental variables. Gerber (1998) reestimates the effects of spending using instrumental variables affecting a candidate's ability to raise campaign funds. Gerber (1998) in his research considers candidate spending as endogenous to properly consider the marginal effects of incumbent and challenger spending. Through his research, Gerber (1998) concludes incumbent's spending to yield a 6% increase in incumbent's vote share. In addition, Gerber (1998) found both incumbent and challenger spending to be statistically significant and important in determining election outcomes. Thus, Gerber confirms Green and Krasno's school of thought of both incumbent spending and challenger spending being statistically significant on the election outcomes.

The past four decades of literature on the topic of campaign spending on election outcomes exemplifies academic scholars coming to no consensus on the matter. Through the variety of literature, each model comes with its own problems. However, separating

each candidate's incumbent status can help further the investigation of the topic.

Variables explaining the candidate's characteristics, characteristic of state, and national political conditions will drive the discussion of campaign spending on election results.

Using probit and tobit models should be a necessity to differentiate from the results of OLS analysis. This paper will reestimate the effects of campaign spending on House

elections from 1996-2012 and will extend the literature on this topic. In the next section, I

will further develop a theory for the effects of campaign spending on House elections

from 1996-2012 by combining statistically significant variables and the best

methodologies from the literature reviewed.

Theory

In order to explain if campaign spending influences outcomes of election, it is first necessary to create a model of House election outcomes. Using prior research as a guide to estimate election results, House election results can be modeled with four different types of models with both benefits and drawbacks: Ordinary Least Squares (OLS), Two-Stage Least Squares (TSLS), Tobit, and Probit. In addition, three different functional forms – linear, log-linear, quadratic - will be used for each type of model equation to evaluate the existence of diminishing returns to additional spending because campaign spending has no upper limit while vote percent is capped at 100%. Finally, the qualitative and quantitative difference between a race involving an incumbent-challenger and a contest for an open-seat leads to distinct equations for each respectively. This paper will propose and test comprehensive models of House election outcomes to accurately analyze the impact of campaign spending from 1996-2012.

From the existing literature, Jacobson (1978;1985;1990), Abramowitz (1988;1991), and Grier (1989) used ordinary least squares regressions to analyze campaign spending influencing outcomes of elections. Both concluded challenger spending has strong and statistically significant effects on candidate vote totals while incumbent spending effects are smaller and rarely statistically significant. However, Grier's results show that incumbent expenditures have a positive and significant effect on votes (Grier, 1989). Using Jacobson (1978; 1985;1990), Abramowitz (1988; 1991), and Grier's (1989) methodologies of OLS, an incumbent support model and open-seat model can be summarized because of three sets of factors: the political complexion of the district, the characteristics of the candidates, and the national political climate. A flaw

that most researchers find in OLS regression models is the need for simultaneous equation system to account for estimating reciprocal relationships such as campaign spending and election outcomes. For example, the expectation that a candidate will do well will bring more campaign contributions. Or, if campaign contributors are “rational investors” who invest more in campaign they expect to be successful, then contributions to candidates should increase with their probability of winning. Thus, the two-stage least squares regression analysis is a standard solution to estimate the effects of campaign expenditures by challengers and incumbents within a system of simultaneous relationships. However, an OLS delivers a starting point to capture the effects of campaign spending.

Jacobson (1978;1985;1990), Abramowitz (1988;1991), and Green and Krasno (1988;1990) used two-stage least squares regressions to analyze campaign spending influencing outcomes of elections. Jacobson (1978;1985;1990) and Abramowitz (1988;1991) concluded once again that the challenger’s campaign expenditures are the single most important variable affecting an incumbent’s chance of being reelected. However, Green and Krasno (1988;1990) using Jacobson’s findings added challenger political quality to find incumbent spending on the vote is much greater than originally estimated while the direct effect of challenger spending is somewhat lower than originally estimated and subject to diminishing marginal returns. Gerber (1998), however, treated both incumbent and challenger spending as endogenous and employed a new set of instrumental variables – Challenger wealth, state voting age population, and lagged spending - to find the marginal effects of incumbent and challenger spending to be roughly equal, but incumbent spending advantage yields a 6% increase in incumbent’s

vote share. Prior attempts in two-stage least squares and instrumental variables exhibit the difficulty of identifying the reciprocal effect and dynamic processes with cross-sectional data; endogenous variables, votes, and expenditures are measured after the election (Gerber, 1998).

From the existing literature, I couldn't find any reputable academic researchers who have used a Probit or a Tobit models to estimate the outcome of the House election. Thus, through my own research, I propose a Probit and Tobit model to estimate the outcome of the House election. Although it may not give the specific number on the percentage of votes obtained, a Probit and Tobit model can explain the probability of a candidate winning with marginal effects.

Thus, the general equation is usually candidate's vote totals regressed on campaign expenditures and other control variables that affect the outcome of the election. The general regression equation for each model used for this paper will be:

$$\begin{aligned}
 \text{Vote \%} = & a + B_1 (\text{Spending}) + B_2 (\text{Incumbent Status}) + B_3 (\text{Party Affiliation}) \\
 & + B_4 (\text{RegisteredPartyVoters}) + B_5 (\text{SCH}) + B_6 (\text{Celebrity Status}) + \\
 & B_7 (\text{Democratic}) + B_8 (\text{Republican}) B_9 (\text{PresMargin}) + B_{10} (\text{StatePop}) + \\
 & B_{11} (\text{StateUnemploy}) + e
 \end{aligned} \tag{3.1}$$

$$\begin{aligned}
 \text{Win/Loss} = & a + B_1 (\text{Spending}) + B_2 (\text{Incumbent Status}) + B_3 (\text{Party} \\
 & \text{Affiliation}) + B_4 (\text{RegisteredPartyVoters}) + B_5 (\text{SCH}) + B_6 (\text{Celebrity Status}) \\
 & + B_7 (\text{Democratic}) + B_8 (\text{Republican}) B_9 (\text{PresMargin}) + B_{10} (\text{StatePop}) + \\
 & B_{11} (\text{StateUnemploy}) + e
 \end{aligned} \tag{3.2}$$

In equation 3.1, Vote \% is the candidate's percentage of the vote received, a is the intercept, the B 's regression coefficients, and e is the error term. In equation 3.2, the dependent variable is defined as 1 if win and 0 if loss. The independent variables are campaign spending, incumbent status, party affiliation, the percentage of registered voters who have the same party affiliation as the candidate, candidate's presence or absence of scandal and controversy/questioning of health, celebrity status, state partisanship, the margin of victory or defeat for the presidential candidate of the candidate's party in the previous presidential election, state population, state unemployment level, and the presence of media.

To find out if campaign spending has any influence on the outcome of the election, it is crucial to put in the candidate expenditure to figure out the statistical significance and expected effects. In addition, incumbent status can be defined as 1 if an incumbent and 0 if challenger or open-seat. From previous literature, the expected effect of challenger spending will have strong and statistically significant effect on the candidate vote totals while incumbent spending effect will be smaller and rarely statistically significant (Jacobson, 1978). As Jacobson (1978;1985) said, challengers receive more marginal electoral return because of their rise from obscurity while incumbents have the advantages of being in office and known. The functional relationship between spending and votes can be linear, semi-log, or quadratic, however, diminishing returns must apply because no candidate can get more than 100% of the votes.

Party affiliation can be defined as 1 if Republican and 0 if Democratic in the equation. Party affiliation will illustrate if being in a Democratic or Republican party

gives a candidate an advantage. Through previous studies, party affiliation is usually statistically significant, yet has minimal effects on the outcome. In addition, including the percentage of registered voters who have the same party affiliation as the candidate will foreshadow the voter turnout for the party affiliated. A candidate who has more registered voters with the same party affiliation is expected to have an advantage.

An incumbent's popularity can be measured with their approval poll before an incumbent runs again for reelection. A high approval rating will lead to reelection while a low approval rating will lead to an unsuccessful campaign for the incumbent. Also, inserting if a candidate has previously experienced a scandal or controversy will negatively impact their chances of election. In addition, the number of times an incumbent gets reelected will demonstrate how the incumbent effectively campaigns or how popular the incumbent is in the district.

The challenger political experience and quality can be measured to control for how much the incumbent should spend. For example, a high-quality challenger will lead to the incumbent spending more while a low-quality challenger will lead to the incumbent spending less. Through Green and Krasno's (1988;1990) findings, they concluded high-quality challengers tend to raise much more money than low-quality challengers. The quality of the candidate is important to differentiate from an easy-win to a hotly contested race. In addition, if a challenger is a celebrity, the challenger then would have an advantage because of name recognition and how much they are liked in the public. Also, the challenger's wealth will show if there are any statistically significant effects of candidate's wealth on election outcomes.

From Abramowitz (1988), national political climate is also crucial to measure because voters are influenced by national issues such as the economy and popularity of the incumbent president. Thus, inserting if an election is taking place during midterm or presidential election will display if the timing of an election is an important variable for a candidate. Furthermore, including the margin of victory or defeat for the presidential candidate of the incumbent's party in the district in the previous presidential election could be another variable that could affect the outcome. Adding a variable that measures the amount a candidate makes media appearances through commercials, pamphlets, radio, and news outlets will show if media has any effect on the outcome of the election. Media appearances for a candidate is crucial so candidates can display their personal characteristics, principles, agenda, and information to voters.

Introducing state characteristics to the equation demonstrates if the political complexion of the state is important to the outcome of an election. Inserting the state and district will differentiate the 435 congressional districts in the US with possibly different trends. Including the state population allows candidates to raise and spend a fixed sum, so a highly-populated state could lead to more funding while a small populated state could lead less funding. To capture the utility of the voters, implementing the state unemployment level into equation may affect the outcome of the election. A high unemployment level during a candidate's term will make the chances of winning slim while a low unemployment level during a candidate's term will make the chances of winning higher.

Finally, adding an election forecast scale ranging from -3 to +3 regarding the chances in a House race for candidates will lead to a better fit of the model to predict

future elections. The election forecast scale is expected to be statistically significant by predicting the winners and losers of House races. Election forecasts are necessary for this model to measure for elite expectations regarding the outcomes of the House elections. In the next section, I will explain the data further to illuminate trends and each variable term in OLS, Tobit, Probit models.

Data

I gather data from all House of Representative races in all 50 states from 1996 to 2012. For campaign spending I use data made available by the Federal Election Committee website (1996-2012), which specifies each candidate's total spending for their respective campaigns. Incumbent status data is gathered from the Federal Election Committee website (1996-2012), which details if a candidate is an incumbent or challenger. Party affiliation data is also collected from the Federal Election Committee website (1996-2012), which specifies each candidate's affiliated party. The percentage of registered voters who have the same party affiliation as the candidate data comes from the Pew Research Center website (1996-2012), which tracked the party affiliation of the general public for over 20 years from 1992 to 2014 (Bell, 2015). Candidate's presence or absence of a scandal, controversy, or questioning of health data is gathered from variety of news agencies that report on political figures from local newspapers to big media companies. A candidate's celebrity status data comes from researching each candidate to figure out if he or she had any past as an actor or as an athlete. The state partisanship data comes from researching each state's Democratic, Republican, or split majority of the past election's House of Representatives seats occupied by Democrats or Republicans. The margin of victory or defeat for the presidential candidate of the candidate's party in the previous presidential election data is gathered from the Federal Election Committee (1996-2012), which states the percentage of votes received for each presidential candidate. State population and state unemployment data comes from the US Bureau of Labor Statistics website (1996-2012), which details each state's population and unemployment from 1996 to 2014. In this study, I will be using percentage of votes

received for each candidate or general election results in wins and losses as the dependent variable. The percentage of votes received for each candidate or general election results in wins and losses comes from the Federal Election Committee (1996-2012). Due to some limitations of accessibility and availability of data, some variables were dropped from the Theory section to proceed with the study.

Below are two regression analyses for OLS, Tobit, and Probit:

$$\begin{aligned} \% \text{ of votes received} = & a + (\text{Spending})B_1 + (\text{IncumbentStatus})B_2 + (\text{Party} \\ & \text{Affiliation}) B_3 + (\% \text{ of registered voters}) B_4 + (\text{Scandals}) B_5 + \\ & (\text{CelebrityStatus})B_6 + (\text{Democratic})B_7 + (\text{Republican})B_8 + (\text{PresMargin})B_9 + \\ & (\text{StatePopulation})B_{10} + (\text{StateUnemployment})B_{11} \end{aligned} \quad (4.1)$$

$$\begin{aligned} \text{Win} = & a + (\text{Spending})B_1 + (\text{IncumbentStatus})B_2 + (\text{Party Affiliation})B_3 + \\ & (\% \text{ of registered voters})B_4 + (\text{Scandals})B_5 + (\text{CelebrityStatus})B_6 + \\ & (\text{Democratic})B_7 + (\text{Republican})B_8 + (\text{PresMargin})B_9 + (\text{StatePopulation})B_{10} \\ & + (\text{StateUnemployment})B_{11} \end{aligned} \quad (4.2)$$

In Equation 4.1, the percentage of voted received is the dependent variable for OLS and Tobit models. In Equation 4.2, win is the dependent variable for a Probit model, which is defined as 1 while a loss is defined as 0. Candidate spending, the percentage of registered voters who have the same party affiliation as the candidate, the margin of victory or defeat for the presidential candidate of the candidate's party in the previous presidential election, state population and state unemployment are all continuous independent variables. Incumbent status, Party Affiliation, % of Registered Voters, Scandals, Celebrity Status, Democratic, and Republican are dummy variables that accounts for the

candidate's incumbent status, party affiliation, percentage of registered party voters, presence or absence of a scandal, controversy, or questioning of health data, celebrity status, and state partisanship, respectively.

Table 4.3 Summary Statistics

Variable	Observations	Mean	Standard Deviation	Minimum	Maximum
Spending	7,396	796,349	1005976	-10000	25,600,000
Incumbent Status	7,396	.4706598	.4991722	0	1
Party Affiliation	7,396	.453894	.4979034	0	1
Party Registered Voters	7,396	27.77217	8.749084	0	35
Scandals	7,396	.0024337	.0492763	0	1
Celebrity Status	7,396	.003245	.0568762	0	1
Democratic	7,396	.4937804	.4999951	0	1
Republican	7,396	.4438886	.4968751	0	1
Presidential Margin of Victory	7,396	-.4360519	5.692798	-8.5	8.5
State Population	7,396	12,300,000	10,100,000	488,167	38,100,000
State Unemployment	7,396	5.879191	2.151818	2	14.2
D_98	7,396	.1005949	.3008119	0	1
D_2000	7,396	.1076257	.3099281	0	1
D_2002	7,396	.1041103	.3054243	0	1
D_2004	7,396	.105192	.3068214	0	1
D_2006	7,396	.1124932	.3159937	0	1
D_2008	7,396	.1103299	.3133217	0	1
D_2010	7,396	.1292591	.3355091	0	1
D_2012	7,396	.1142509	.3181373	0	1

Observations

The table on the previous page summarizes statistical observations for all continuous variables and dummy variables used in the regression analysis. Campaign spending's maximum is \$25,600,000 and campaign spending's minimum is -\$10000. Campaign spending could be most spent in congressional districts that are hotly contested while campaign spending for those in easily determined congressional races could be minimal. The outlier of -\$10000 is interesting because that meant a candidate either took out a loan or refunded checks to a donor. The total amount of campaign spending in House of Representatives congressional races from 1996 to 2014 was about \$5.8 billion. From 1996 to 2004 the total amount of campaign spending in the House of Representatives congressional races from the data averaged about \$488 million. After 2004, there is a substantial increase in campaign spending through 2012. House congressional races from 2006 to 2012 averaged about \$853 million, which is an increase of 74.68% from the 1996 to 2004 House congressional races average campaign spending. Campaign spending generally spikes after a presidential election during the midterm election except for 1998 and 2012. In general, there has been growth of campaign spending since 1996. The increase in campaign spending is due to the growth in national economy, population, and changes in campaign-finance laws.

Incumbent status dummy variable determines if a candidate is an incumbent or not an incumbent. Zero identifies the candidate as either a challenger or an open-seat contender. One identifies the candidate as an incumbent. From 1996 to 2012, there has been an average of about 394 incumbents running for reelection in each election race. In addition, Democrats have averaged 195 incumbents running for reelection while

Republicans have averaged 198 incumbents running for reelection. Republican incumbents have typically outspent Democratic incumbents from 1996 to 2012. In general, incumbents have a 2 to 1 campaign spending advantage over challengers. The name recognition and insurmountable advantage in campaign spending allows incumbents to typically have little struggle for reelection. Therefore, getting reelected is a lot cheaper than winning a seat in the House in the first place.

Party affiliation is another dummy variable that identifies 1 for a Republican candidate while 0 for a Democratic candidate. From 1996 to 2012, there have been an average of 759 total candidates in the midst of congressional races. In addition, Democrats have averaged 386 candidates in each election race while Republicans have averaged 372 candidates in each election race. From 1996 to 2012, Republicans have typically outspent Democrats on the campaign trail. One identifier of candidates is the party that a candidate is affiliated with regarding stances on policies and issues

Party registered voters identifies voters registered to either the Democratic or Republican party. Registered voters to a party ranged from 0 to 35 percent representing the significance of a candidate having foundation of support just being part of the party. From 1996 to 2012, Democrats have more registered voters than Republican voters. Moreover, candidates spend more money to attract more voters to register, but also, register to their respective party to receive more votes.

The scandal dummy variable identifies if a candidate has previously or went through a scandal, controversy or health-related scare. One defines a scandal did take place with the candidate. Zero defines the candidate has no previous or current scandals. The celebrity status is also a dummy variable identifying if a candidate is a celebrity or

not a celebrity. One defines if a candidate is a celebrity while zero defines if a candidate is not a celebrity.

State partisanship variable defines the majority of House representatives who are either Democrat or Republican. Splitting Democratic and Republican partisanship into two variables allow for a split House of representative. Therefore, a democratic partisanship defines democratic variable with one and republican variable with zero and vice versa. In addition, if there is a split partisanship, both democratic and republican variable is zero and the equation implicitly takes into account a split partisanship within the House of Representatives. State population and state unemployment are variables as well to consider if changes in population and unemployment lead to a candidate having an advantage or disadvantage. In the next section, I will explain the methods to carry out the study including the OLS, Tobit and Probit models.

Methods

Ordinary Least Squares, Tobit, and Probit regression analysis will be used to determine the statistical significances of each independent variable in both Equation 1 and Equation 2 from the data section. By testing Ordinary Least Squares, Tobit and Probit against each other, the best estimation method will come forward to test campaign spending on election outcomes.

Because past researchers have used ordinary least squares analysis, I will continue to use ordinary least squares analysis to measure the effects of campaign spending on election outcomes. Past researchers have found significant variables through ordinary least squares regression analysis. An OLS model is used on the aggregate data that observes 7396 candidates running for election in congressional races from 1996 to 2012 and the percentage of votes received. An OLS model attempts to explain the relationship between a continuous response variable and continuous explanatory variables, where Y is predicted by X. The OLS model will predict the percentage of votes received by a candidate through various independent variables. By testing the model, the significance of variables will show the key contributors to Y, the dependent variable, in this case percentage of votes received by candidate.

The Tobit regression analysis will also be used to measure the statistical significance of the independent variables on the dependent variable. A Tobit regression analysis considers the censored dependent variables to estimate linear regression. I use this model, because of the threshold between 0 and 100 percent votes a candidate can receive in a congressional election. In addition, the various candidates receiving 0 percent of the votes and 100 percent of the votes are other reasons to use a Tobit model, because

other regression analyses, such as OLS, equates zero value cells with missing data. Also, a regression analysis like OLS would most likely show predicted values below 0 and over 100 percent of the votes received which is another reason why a Tobit model is necessary to censor the dependent variable within the 0 and 100 percentage of votes received range. Even though a Tobit analysis runs a regression, which gives coefficients, standard error, t-value, p-value, and confidence intervals for each variable, marginal effects must be calculated for each independent variable to measure the effect of marginal change in the conditional mean on the dependent variable. For example, marginal effects could explain the specific effect a dollar increase in campaign spending has on the percentage of votes received.

Probit regression analysis will be the final model used to measure the statistical significance of the independent variables on the binomial response variable. The binomial response variable in this case will be 1 for win and 0 for lose. The Probit regression model explains the relationship between a binomial response variable and the continuous independent variables. In sum the Probit examines how the probability of an event changes when changing the independent variable and predicts the probability of an event through all independent variables. Just like a Tobit model analysis, marginal effects must be calculated for each independent variable to measure the effect of marginal change in the conditional mean on the dependent variable. I include a Tobit and Probit analysis because past researchers have never used these two models to explain if campaign spending influences election outcomes.

Model Results

OLS Model Results

7.1 Robust OLS Regression

Independent Variables	Coefficient (P-Value)
Campaign Spending	7.1×10^{-7} (0.003)
Incumbent Status	30.6 (0.000)
Party Affiliation	0.896 (0.017)
Party Registered Voters	.981 (0.000)
Scandals	-10.79 (0.000)
Celebrity Status	1.772 (0.537)
Presidential Margin of Victory/Defeat	-0.2592 (0.000)
Democratic Partisanship	-0.6285 (0.372)
Republican Partisanship	-0.2457 (0.726)
State Population	2.18×10^{-8} (0.198)
State Unemployment	-0.2534 (0.076)

Tobit Model Results

7.2 Tobit Regression

Independent Variables	Coefficient (P-Value)
Campaign Spending	6.77×10^{-7} (0.000)
Incumbent Status	31.01 (0.000)
Party Affiliation	0.8509 (0.032)
Party Registered Voters	0.9963 (0.000)
Scandals	-11.045 (0.001)

Celebrity Status	1.567 (0.580)
Presidential Margin of Victory/Defeat	-0.2677 (0.000)
Democratic Partisanship	-0.5070 (0.473)
Republican Partisanship	-0.0808 (0.908)
State Population	-2.19×10^{-8} (0.239)
State Unemployment	-0.2624 (0.081)

7.3 Marginal Effects

Independent Variables	dy/dx (P-Value)
Campaign Spending	6.77×10^{-7} (0.000)
Incumbent Status	31.01 (0.000)
Party Affiliation	0.8509 (0.032)
Party Registered Voters	0.9963 (0.000)
Scandals	-11.04 (0.001)
Celebrity Status	1.567 (0.580)
Presidential Margin of Victory/Defeat	-0.2677 (0.000)
Democratic Partisanship	-0.5070 (0.473)
Republican Partisanship	-0.0808 (0.908)
State Population	2.19×10^{-8} (0.239)
State Unemployment	-0.2624 (0.081)

Probit Model Results

7.4 Probit Regression

Independent Variables	Coefficient (P-Value)
Campaign Spending	1.29×10^{-7} (0.000)

Incumbent Status	2.615 (0.000)
Party Affiliation	0.1181 (0.027)
Party Registered Voters	0.0348 (0.000)
Scandals	-0.9631 (0.004)
Celebrity Status	0.8477 (0.047)
Presidential Margin of Victory/Defeat	-0.0274 (0.000)
Democratic Partisanship	0.0014 (0.987)
Republican Partisanship	0.0424 (0.640)
State Population	-5.33×10^{-10} (0.828)
State Unemployment	-0.0033 (0.863)

7.5 Marginal Effects

Independent Variables	dy/dx (P-Value)
Campaign Spending	5.12×10^{-8} (0.000)
Incumbent Status	0.7995 (0.000)
Party Affiliation	0.0466 (0.027)
Party Registered Voters	0.0137 (0.000)
Scandals	-0.3496 (0.000)
Celebrity Status	0.2845 (0.007)
Presidential Margin of Victory/Defeat	-0.0108 (0.000)
Democratic Partisanship	0.0005 (0.987)
Republican Partisanship	0.0167 (0.640)
State Population	-2.11×10^{-10} (0.828)
State Unemployment	-0.0013 (0.863)

Model Tests

I tested the data on a number of assumptions according to the Gauss-Markov assumptions, which is BLUE. BLUE stands for the best linear unbiased estimator, where best is defined as the most efficient and unbiased estimator (Pindyck & Rubinfeld, 2000). Because multicollinearity can cause standard errors to be larger than normal impacting the results in a critical manner, I first test for multicollinearity problems with my independent variables in the OLS, Tobit, and Probit models. Through a simple correlation test, I find no multicollinearity problem in my data that would significantly impact the results of all regressions.

Next, I test for serial correlation because under the Gauss-Markov assumptions, errors must be independent from each other. However, if serial correlation is present in the data, it can cause standard errors to be smaller and t-stats to be higher. Dummy variables that control for time period such as the dummy years in my summary statistics helps avoid the problem of serial correlation. To test for serial correlation, the Durbin-Watson test is needed to determine the independence of errors. If the D-stat from the Durbin-Watson test is near the integer 2, then serial correlation will not be a problem and confirms the assumption that errors are independent from each other. In the case of OLS, Tobit, and Probit models, serial correlation does not present an issue in my results because of the D-statistic being 1.88. Therefore, there is no sign of positive or negative serial correlation.

Then, I test for heteroscedasticity for the OLS model because of the assumption that the error terms must have constant variance. Because Tobit and Probit models are maximum likelihood estimators, the test for heteroscedasticity is unnecessary for those

two specific models. To test for heteroscedasticity in the OLS model, I run the White test, which explains the variance of the errors in the regression. After running the White test, the OLS model suffers from heteroscedasticity, which causes the regression to generate unreliable standard errors, t-stats, and p-values. To take this into account, I then run the OLS regression in Stata with the robust command that attempts to fix the cluster of standard errors.

Lastly, I test for normality for the OLS model, which is the assumption that the errors are distributed normally. Once again, because Tobit and Probit models are maximum likelihood estimators, the test for normality is unnecessary for those two specific models. To test for normality in the OLS model, I run the Jarque-Bera test, which explains the skewness and kurtosis matching normal distribution. After running the Jarque-Bera test, the OLS model suffers from non-normality. With 99% confidence level, the OLS model suffers from both skewness and kurtosis, and ultimately, non-normality. Therefore, I tried to fix this problem with linear, log, and square transformations of the dependent variable and also the campaign spending independent variable. However, with all these transformations, the error terms were still not distributed normally. With this problem, the model could suffer from inefficiency because of possible outliers present in the model causing kurtosis and skewness. Therefore, I believe that the Tobit and Probit models are superior model specifications to measure the effects of campaign spending on election outcomes. Thus, in my analysis, I will only discuss the regression results from the Probit and Tobit model, because the OLS model suffers from non-normality causing inefficiency and heteroscedasticity generating unreliable standard errors, t-stats, and p-values.

Analysis

From the Tobit regression results, the regression coefficient for campaign spending is 6.77×10^{-7} with a standard error of 1.75×10^{-7} and a p-value of 0 at the 5% confidence level. This means that with 95% confidence the null hypothesis can be rejected that campaign spending is insignificant. Therefore, campaign spending has a positive, statistically significant effect on the percentage of votes received for a candidate. After computing the marginal effects, campaign spending has a positive, statistically significant effect on the percentage of votes received for a candidate. The marginal effect for candidate spending is 6.77×10^{-7} with a standard error of 0, z-statistic of 3.87, and p-value of 0. This means that campaign spending is a positive and statistically significant that for every \$1 dollar increase in campaign spending, the vote percentage received will increase by 6.77×10^{-7} . That may not seem a lot at plain sight but if you think about it, a \$1,000,000 increase in campaign spending will increase the vote percentage received by 0.667.

From the Probit regression results, the regression coefficient for campaign spending from the Probit model results is 1.29×10^{-7} with a standard error of 1.88×10^{-8} and a p-value of 0 at the 5% confidence level. This means that with 95% confidence the null hypothesis can be rejected that campaign spending is insignificant. Therefore, campaign spending has a statistically significant effect on the outcome of the election. After computing the marginal effects, campaign spending has a positive, statistically significant effect on the outcome of the election. The marginal effect for campaign spending is 5.12×10^{-8} with a standard error of 0, z-statistic of 6.86, and p-value of 0. This means that campaign spending is a positive and statistically significant

that for every \$1 dollar increase in campaign spending the probability of winning increases by 5.12×10^{-8} . Once again, this may not seem a lot at plain sight but if you think about it, a \$1,000,000 increase in campaign spending will increase the probability of winning by 0.0512.

In addition, going through each election year, I found that the candidate who spent the most money in their respective congressional district won a majority of time. The table below shows the winning percentage of the candidates who spent the most money within their congressional district.

9.1 Candidates Who Spent the Most Money Winning Percentage

Election Year	1996	1998	2000	2002	2004	2006	2008	2010	2012
Winning Percentage	92%	95%	95%	94%	98%	93%	92%	86%	95%

The results of campaign spending from both the Tobit and Probit model suggest that campaign spending does influence the outcome of the election and the percentage of votes received for a candidate. In general, the data proposes that campaign spending does buy some of the votes and possibly an election with the increase in voting percentage and winning probability, respectively.

From the Tobit regression results, the regression coefficient for incumbent status is 31.01 with a standard error of 0.3458 and a p-value of 0 at the 5% confidence level. This means that with 95% confidence the null hypothesis can be rejected that incumbent status is insignificant. Therefore, incumbent status has a positive, statistically significant effect on the percentage of the votes received for a candidate. After computing the marginal effects, incumbent status has a positive, statistically significant effect on the percentage of the votes received for a candidate. The marginal effect for a candidate who

is an incumbent is 31.01 with a standard error of 0.3468, z-statistic of 89.42, and p-value of 0. This means that being an incumbent is a positive and statistically significant effect on the percentage of votes received for a candidate. The discrete change of the dummy variable from 0 to 1 shows that the for being an incumbent, the vote percentage received will increase by 31.01.

From the Probit regression results, the regression coefficient for incumbent status is 2.6154 with a standard error of 0.0454 and p-value of 0 at the 5% confidence level.

This means that with 95% confidence the null hypothesis can be rejected that incumbent status is insignificant. Therefore, incumbent status has a positive, statistically significant effect on the outcome of an election. After computing the marginal effects, incumbent status has a positive, statistically significant effect on the outcome of an election. The marginal effect for incumbent status is 0.7995 with a standard error of 0.00746, z-statistic of 107.25, and p-value of 0. This means that being an incumbent is a positive and statistically significant that for being an incumbent the probability of winning increases by 0.7995903.

In addition, going through each election year, I found the reelection rate for an incumbent to be very high. The table below shows the winning percentage of incumbents.

9.2 Incumbent Candidate's Winning Percentage

Year	1996	1998	2000	2002	2004	2006	2008	2010	2012
Winning Percentage	94%	98%	98%	96%	98%	94%	94%	85%	90%

The results of incumbent status from both the Tobit and Probit model suggest that being an incumbent does influence the outcome of an election and the percentage of votes received for a candidate. In general, the data recommends that being an incumbent does

give a candidate an insurmountable advantage with the increase in voting percentage and winning probability.

From the Tobit regression results, the regression coefficient for Party Affiliation is 0.8509 with a standard error of 0.397496 and p-value of 0.032 at the 5% confidence level. This means that with 95% confidence the null hypothesis can be rejected that Party Affiliation is insignificant. Therefore, Party Affiliation has a positive and statistically significant effect on the percentage of votes received for a candidate. After calculating the marginal effects, Party Affiliation has a positive, statistically significant effect on the percentage of votes received for a candidate. The marginal effect is 0.8509, which is the discrete change of the dummy variable from 0 to 1. Therefore, being a Republican increases vote percentage of a candidate by 0.8509.

From the Probit regression results, the regression coefficient for Party Affiliation is 0.1181 with a standard error of 0.5337 and p-value of 0.027 at the 5% confidence level. This means that with 95% confidence the null hypothesis can be rejected that Party Affiliation is insignificant. Therefore, Party Affiliation has a positive and statistically significant effect on the outcome of the election. After calculating the marginal effects, Party Affiliation has a positive, statistically significant effect on the outcome of an election. The marginal effect is 0.04667, which is the discrete change of the dummy variable from 0 to 1. Therefore, being a Republican increases vote percentage of a candidate by 0.04667.

In addition, going through each election year, I found the average amount a Republican or a Democrat spent. The table on the top of the next page displays the average campaign spent by a Democrat or Republican spent during the election year.

9.3 Average Democrat and Republican Candidate Spending

Year	1996	1998	2000	2002	2004	2006	2008	2010	2012
DEM	472158	505492	670205	732457	695716	850606	1071401	1257311	1031097
REP	560964	599163	722852	743077	852563	1171786	1071882	1074416	1323420

The results from both the Tobit and Probit model suggest that being part of either the Democratic or Republican party matters in the outcome of an election and the percentage of votes received for a candidate. The data in general with the Party Affiliation dummy variable defining 1 as Republican and 0 as Democratic suggests that being a Republican increases the vote percentage of a candidate and the winning probability of a candidate due to the increase in marginal effects for a discrete change of dummy variable from 0 to 1.

From the Tobit regression results, the regression coefficient for percentage of registered voters to the respective candidate's party (Party Registered Voters) is 0.9963 with a standard error 0.02132 and p-value of 0 at the 5% confidence level. This means that with 95% confidence the null hypothesis can be rejected that the percentage of registered voters to the respective candidate's party is insignificant. Therefore, the percentage of registered voters to the respective candidate's party has a positive and statistically significant effect on the percentage of votes received for a candidate. After calculating the marginal effects, the percentage of registered voters has a positive and statistically significant effect on the percentage of votes received for a candidate, which is 0.9963 with a standard error of .02132 and p-value of 0. Thus, a percentage increase in the percentage of registered voters to the respective candidate's party increases the vote percentage for a candidate by 0.9963.

From the Probit regression results, the regression coefficient for percentage of registered voters to the respective candidate's party is 0.03482 with a standard error of

0.0038 and p-value of 0 at the 5% confidence level. This means that with 95% confidence the null hypothesis can be rejected that the percentage of registered voters to the respective candidate's party is insignificant. Therefore, the percentage of registered voters to the respective candidate's party has a positive and statistically significant effect on the outcome of an election. After calculating the marginal effects, a percentage increase in the percentage of registered voters to the respective candidate's party increases the probability of winning by 0.0137764.

In addition, the Pew Research Center tracked the party affiliation of the general public for over 20 years from 1992 to 2014. The table below shows the general public's party identification from 1996-2012.

9.4 General Public's Party Affiliation

Year	1996	1998	2000	2002	2004	2006	2008	2010	2012
Democrat	33	32	33	31	33	33	35	33	32
Republican	29	28	28	30	29	28	25	25	25

The results from both the Tobit and Probit suggest that the percentage of registered voters to the respective candidate's party is statistically significant. Therefore, an increase in percentage of registered voters to the respective candidate's party will increase a candidate's vote percentage and winning probability from both Tobit and Probit models.

From the Tobit regression results, the regression coefficient for the Scandals dummy variable is -11.045 with a standard error of 3.27 and p-value of 0.001 at the 5% confidence level. This means that with 95% confidence the null hypothesis can be rejected that the Scandals variable is insignificant. Therefore, the scandals variable has a negative and statistically significant effect on the percentage of votes received for a candidate. After calculating the marginal effects, scandals have a negative and statistically significant impact on the percentage of votes received for a candidate. The

marginal effect for having a scandal as a candidate running for congressional election is -11.045 with a standard error of 3.27 and a p-value of 0.001. Thus, through this variable, it is very noticeable that scandals derail candidate's campaigns because it brings negative and degrading attention to the candidate, which then deters voters from voting for the candidate and probability of winning decreasing.

From the Probit regression results, the regression coefficient for the Scandals dummy variable is -0.9631 with a standard error of 0.337 and p-value of 0.004 at the 5% confidence level. This means that with 95% confidence the null hypothesis can be rejected that the Scandals variable is insignificant. Therefore, the scandals variable has a negative and statistically significant effect on the outcome of an election with wins and losses. After calculating the marginal effects, scandals have a negative and statistically significant impact on the outcome of an election. Thus, if a candidate has a scandal the probability of winning decreases by -0.3496 with a standard error of 0.0954 and p-value of 0. Thus, from both the Tobit and Probit models, I can concur that scandals do have a negative and statistically significant effect on the percentage of votes received for a candidate and the probability of winning an election.

From the Tobit regression results, celebrity status is positive and statistically insignificant. However, from the Probit regression results, celebrity status is positive and statistically significant with a regression coefficient of 0.8477, standard error of 0.4271, and p-value of 0.047. After calculating the marginal effects of the Probit model, the celebrity status variable has a positive and statistically significant impact on the outcome of the election. The marginal effect is if a candidate is a celebrity, then the probability of winning increases by 0.2845 with a standard error of 0.1061 and p-value of 0.007. Unlike

past researchers, the celebrity status variable is positive rather than negative. This could show the dynamic switch to voters being more attracted to celebrities to vote for. In Abramowitz's (1991) case in Senate races, the celebrity candidate has a negative and statistically significant effect on the vote percentage received for a candidate. However, due to one out of the two models proving the positive statistical significance of celebrity status, celebrity candidates having an advantage or disadvantage cannot be confirmed.

From both the Tobit and Probit regression model, the margin of victory or defeat for the presidential candidate of the candidate's party in the previous presidential election (Presidential Margin of Victory/Defeat) is negative and statistically significant effect on the percentage of votes received by a candidate and probability of winning an election. From the Tobit regression model, the regression coefficient is -0.2677. After calculating the marginal effect, the margin of victory or defeat for the presidential candidate of the candidate's party in the previous presidential election variable is negative and statistically significant with a p-value of 0 at the 5% confidence level. The marginal effect of the margin of victory or defeat for the presidential candidate of the candidate's party in the previous presidential election is -0.2677 with a p-value of 0. From the Probit regression model, the regression coefficient is -0.02748. After calculating the marginal effect, the margin of victory or defeat for the presidential candidate of the candidate's party in the previous presidential election is -0.01087. So, for every percentage increase of the margin of victory or defeat for the presidential candidate of the candidate's party in the previous presidential election, there is a decrease of -0.01087 probability of winning the election. The margin of victory or defeat for the presidential candidate of the candidate's party in the previous presidential election shows us that the previous president's agenda may lead

to the general public voting for the opposition party of the president to keep in check the policies of the president elected in the previous election. Or, the margin of victory or defeat for the presidential candidate of the candidate's party in the previous presidential election explains the disapproval of the president elected in the previous election.

Lastly, state characteristics such as state partisanship, state population, and state unemployment are statistically insignificant. Unlike Abramowitz's (1988) studies of the Senate races, state characteristics do not statistically have a significant impact on the outcome of an election or the winning probability of a candidate in House races. The growth of national politics over state politics could be a valid reason why state characteristics are statistically insignificant. Moreover, state characteristics may not matter in House races because of congressional districts separating each population. Therefore, possibly taking congressional district partisanship, congressional district population, and congressional district unemployment would be more beneficial for House of Representatives election races for further studies.

Conclusion

The purpose of this study was to investigate and determine the impact of campaign spending and its relationship to the outcome of an election and the votes received for a candidate. There have been many academic scholars who have researched this topic intensively producing plethora of literature. However, most academic research done on this topic is from 10 to 20 years ago that is still referred to, yet widely disputed today. Thus, this study renews the debate and sheds some light on campaign spending determining election results. This study serves as a purpose to further research in the field of campaign financing to reveal the truth behind the politicization of the topic. Through the use of unbiased data, I determine that campaign spending does have an influence in election results and the percentage of votes received for a candidate. To determine if campaign spending does have an influence in election results and the percentage of votes received for a candidate, I use two types of models, the Tobit and Probit model. With the Tobit and Probit regression analysis, I determine the statistically significant relationships among the independent variables, which include campaign spending, incumbent status, party affiliation, the percentage of registered voters to the respective candidate's party, scandals, controversies, health scares, celebrity status, state partisanship, the margin of victory or defeat for the presidential candidate of the candidate's party in the previous presidential election, state population, and state unemployment.

Results of this study suggest that campaign spending, party affiliation, percentage of registered voters to the respective candidate's party, scandals, and the margin of victory or defeat for the presidential candidate of the candidate's party in the previous presidential election all have an influence in determining the results of an election and the

percentage of votes received for a candidate with their statistical significance. I find that for every dollar spent in campaign spending, the probability of winning the race increases by 5.12×10^{-8} . However, spending \$1,000,000 increases the probability of winning by 0.0512. In addition, spending \$1,000,000 increases the vote percentage received for a candidate by 0.667. Moreover, the candidates who spend the most money within their congressional district during a House race usually wins the election. Being an incumbent, a candidate has an insurmountable advantage with free media, mailing, name recognition, and most importantly, money. The reelection rate since 1996 for incumbents have been very high. Party affiliation of a candidate is important factor in determining the results with different policies for voters to agree upon. The study also suggests that candidates who go through scandals are more likely not going to win the election with negative publicity and a lack of trust from voters. The margin of victory or defeat for the presidential candidate of the candidate's party in the previous presidential election explains the negative relationship to election outcomes because of voter disapproval of the president elected in the previous election every two years.

So, what does this mean? A candidate with no scandals, controversies, or health scares who spends a lot of money on top of being an incumbent who is opposed to the previous president elected has an overwhelming advantage in winning the election. However, voters should look into candidate's policies and interests that align with the respective voters' views and outlooks of the congressional district. Moreover, an even playing field between incumbents and challengers must be insured so a free and fair election occurs where donations from 1% of the population are not the only people out of the population influencing the outcome of an election.

Limitations in this study include the data available to analyze the effects of each variable. Polling records should be added to further the studies of this topic. Along with data availability and polling records, the task of reformatting datasets to fit the study provided was another problem. Also, the lack of prior research using Probit and Tobit models for campaign spending on election outcomes was challenging but thought provoking. The measure used to collect the data could have inhibited the ability to conduct a thorough analysis of the topic. Although the sample size of this study exceeds 7000, the elapsed time from 1996-2012 could be another limitation because each election year could have different trends or patterns.

Further studies need to be done on the relationship between the presence of media (TV advertisements, partisan news stations, social media) and outcome of an election. Voter familiarity and name recognition are key in getting the voters to vote for the candidate. Further studies should be done on who is investing into these candidates and how much return these investors get after the election results to determine how well the money was spent on the candidate. Past researchers have mentioned spending caps and other campaign finance reforms to further the discussion of an even playing field, but spending caps and other campaign finance reforms would actually hurt the challengers by giving more of an advantage to the incumbent. With many costly campaigns, the rising cost of a House seat, Super PAC domination, and Supreme Court cases such as Citizens United, the inequality of voting power is increasing towards the wealthy rather than towards the average voter. With the influence of money being overwhelming in election results, there needs to be better disclosure laws and spending caps on individuals and groups donating to the candidate and Super PACS. As the great Abraham Lincoln says in the

Gettysburg Address to ensure the existence of a representative democracy in America,
“...government of the people, by the people, for the people, shall not perish from the
Earth” (History 2010).

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