Campaign Spending: A Meta-Analysis for Incumbents and Challengers

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# **Topic Definition**

Our meta-analysis evaluates to what extent candidate spending affects election outcomes. Specifically, we explore the relationships between incumbent spending and challenger vote share, and challenger spending and challenger vote share. We chose to focus on the incumbent/challenger split rather than the Democrat/Republican split, because it is incumbent spending that is at the heart of the campaign finance reform debate. We do not look at the correlation between candidate spending and election outcomes, because the majority of the literature focuses on vote share, not election results.

### **Political and Policy Environment**

Since the early 1970s, campaign finance reform has been debated almost continuously. Reformers claim that, as Senator John McCain, a Republican from Arizona, stated in early 2007, "the voices of average Americans have been drowned out by the deafening racket of campaign cash."<sup>1</sup> The various attempts to regulate and limit campaign contributions and expenditures have, according to reformers, failed to limit the corrupting effects of campaign spending.<sup>2</sup> In part, this can be explained by continual attempts to circumvent the laws and utilize loopholes that have been exposed in the legislation.

Since the 2002 Bipartisan Campaign Reform Act was passed, there have been a number of attempts to circumvent and test its reforms. Various political groups and organizations have emerged since 2002, and their status under the law is still unclear.<sup>3</sup>

<sup>&</sup>lt;sup>1</sup> John Solomon, "One Time Reformer Taps Big Donors," *The Washington Post*, February 11, 2007, sec. A. <sup>2</sup> Ibid.

<sup>&</sup>lt;sup>3</sup> Robert Barnes and Matthew Mosk, "High Court to Revisit Campaign Finance Law.' *The Washington Post*, January 20, 2007, sec. A.

In early 2007, Senator John McCain introduced legislation to limit "nonprofit political groups known as 527s from using unlimited donations to run political ads and fund other activities aimed at influencing voters in the run-up to elections."<sup>4</sup> This latest attempt to reform campaign finance is simply one of many attempts to close these loopholes and further reform campaign spending laws.

Support for campaign finance reform is limited in Washington D.C. Even Senator McCain, who is has been a leading advocate for reform and public funding for elections, backed away from his reform efforts during his 2008 Presidential campaign.<sup>5</sup> For politicians, both Republican and Democrat, limiting their campaign spending has always appeared to be a dangerous gamble. As the 2008 Presidential election nears however, the issue of campaign finance reform is once more of extreme importance and interest.

# Theory

The cost of running for office has been steadily increasing since the 1970s. During the 2004 Presidential election, the Bush and Kerry campaigns spent well over a billion dollars.<sup>6</sup> The rising cost of political campaigns is mostly due to the increasing importance of television advertising. Candidates can no longer rely on the more traditional form of campaigning of in-person appearances. In order to reach the large number of potential voters that they need, they must resort to television advertising. It has become accepted that in order to wage a successful campaign, it is necessary to purchase

<sup>&</sup>lt;sup>4</sup> Solomon, John. "One Time Reformer Taps Big Donors," *The Washington Post*, February 11, 2007, sec. A.

<sup>&</sup>lt;sup>5</sup> ibid

<sup>&</sup>lt;sup>6</sup> Federal Election Commission, "2004 Presidential Campaign Financial Activity Summarized."

large quantities of television advertisements.<sup>7</sup> And, these advertisements are expensive. They are so expensive in fact, that candidates spend much of their time fundraising, because it appears that the more money one raises, the better his or her chance of winning the election.<sup>8</sup>

The fear that reformers express is that the increasing amounts of money being spent on elections is corrupting American politics. The more money candidates raise, the greater the influence donors appear to have with their candidate. John McCain has been one of the leading reformers on this issue. In an editorial he wrote in 2000, he stated that he "believe[s] that most Americans understand that soft money corrupts both politics and government, whether it comes from big business, labor, or trial lawyers. They intuitively know that these donations capture the attention of elected officials, who then neglect problems that directly affect their families, businesses, and schools."<sup>9</sup> Because of this logic, McCain has successfully introduced campaign finance reform legislation which has curbed the amount and ways in which private entities can donate to candidates. At this point, reforms have primarily sought to limit the amount of money donors can give. However, donors, candidates, and political parties have all exploited loopholes in campaign finance law, and new groups and organizations have been created to bypass regulations.

Reformers have therefore consistently called for more action to be taken. As always, there continue to be calls to increase limitations on the amount of money that

 <sup>7</sup> West, Darrell. 1997. <u>Air Wars: Television Advertising in Election Campaigns, 1952-</u> <u>1996</u>. Congressional Quarterly Press.

<sup>&</sup>lt;sup>8</sup> Princeton Survey Research Associates. 1997. "Money and Politics Survey"

<sup>&</sup>lt;sup>9</sup> McCain, John. "Campaign Finance Reform Must Not Be Ignored" USA Today, March 01, 2000.

may be spent on elections, as well as limiting private financing for elections.<sup>10</sup> These proposed reforms however, are often based more on intuition than on systematic research about the impact of money on campaigns.

## Methodology

#### The Search

To create the universe for our meta-analysis, we searched for all relevant articles related to this question using the key words "(Campaign) AND (Spending OR Finance OR Expenditure) AND (Outcome OR Result OR Effect)." We searched the following databases: JSTOR, EconLit, the MLA Directory of Periodicals, and the EBSCO Multiple Database Search, which includes the databases: Academic Search Premier, Communication and Mass Media Complete, International Political Science Abstracts, Military and Government Collection. This search yielded 40 relevant articles.

In an effort to obtain articles not published or inaccessible to us through these databases, we pursued a number of different methods for finding articles. First, we searched Dissertation Abstracts Online to find student dissertations on this topic. Using the same search terms we were able to find three dissertations related to our question. Next, we went through several articles' bibliographies to find more relevant studies to add to our universe. We chose these articles based on relevance to our subject. We also took into account how many articles the authors had written on this subject. The articles that we chose to look at more carefully were "Money and Votes in State Legislative Elections" by Anthony Gierzynski and David Breaux, "Estimating the Effect of

<sup>&</sup>lt;sup>10</sup> McCain, John. "More Campaign Finance Reform is Needed" *The Chicago Tribune*, December 10, 2004.

Campaign Spending on Senate Election Outcomes Using Instrumental Variables" by Alan Gerber, and "The Effects of Campaign Spending in House Elections: New Evidence for Old Arguments" by Gary Jacobsen. Next, we emailed the authors of these articles to request additional sources that may have been published in obscure journals or may still be working papers. This was done in an attempt to reduce the presence of publication bias within our meta-analysis. In the end, we found over 100 articles that seemed as though they might be relevant.

# Specification and Coding

After identifying these articles, we developed inclusion criteria to limit our master list to those articles that address the specific question of how campaign spending influences vote share in elections. We determined the following:

- <u>The study must be about elections in the United States.</u> Because there are differences in terms of both the social and political structures of different nations, it seems necessary to limit the studies we use to the United States if we hope to successfully apply our results to the United States.
- 2) <u>The study must use data from elections after 1974.</u> The passage in 1971, and subsequent amendment in 1974, of the Federal Election Campaign Act (FECA), has changed elections in the United States. In addition, the amount of spending on campaigns has seen a significant increase since the 1972 Presidential campaign. As with the decision to include only studies whose data has to do with American campaigns, it seems necessary to limit studies to those whose data is from elections after 1974 if we hope to be able to apply our findings to current elections.

- 3) <u>No duplicate studies.</u> This means that we will not include multiple studies that use the same data. In many instances, authors have published the same studies in multiple journals, either concurrently, or separated by multiple years. If we were to include more than one of these studies, we would be skewing our results.
- 4) <u>The study must measure a correlation between money spent and vote share.</u> While many studies examined the overall impact of spending on elections, not all examine the specific correlation between the amount of money spent and the number of votes received. By including only the studies that do, we have eliminated all studies that look at the impact of spending on voter turnout, or challenger emergence.

After using these inclusion criteria, we were able to limit our initial master list to 30 studies.

Next we created a codebook in which we recorded all the data we extrapolated from the articles. To make the codebook, we first read a sample of articles in our master list to determine which aspects of our studies would need to be coded. After each of us read the four articles independently, we came together and decided on certain aspects of the study that needed to be in the codebook. The data we took from each study consisted of: sample size, type of data (time series, panel, cross-section), time period, type of candidate and election, regression used (whether or not it was OLS or 2SLS, and also which specific regression was used from the article), independent and dependent variables of interest and their measures, regression coefficients, p-values, t-stats, and standard errors. We also identified three moderator variables: 1) whether or not the study controlled for candidate quality, 2) whether the study consisted of local or federal election data, and 3) whether or not the study used a two-party or total vote share. *Identifying the Effect Size* 

After completing the codebook, we had to determine what we would use as an effect size in our meta-analysis. Because our question of interest is how campaign spending affects vote share, we specified that our effect size should measure how both incumbent and challenger spending affected the vote share. As it turned out, many of the articles measured only some variation of campaign spending: some of the articles measured how campaign spending swayed individual voters, some measured the effectiveness of PAC spending, others measured a nonlinear relationship between spending and vote share, still others measured the effectiveness of spending per voter in a district, and many measured the difference in effectiveness between Republican and Democrat spending. These studies examined different questions from our own, and so we removed the studies from our analysis. This left us with only six articles, though together they contained 16 regressions and over 2,000 elections, which is a considerably large sample size. The coefficients on both incumbent and challenger spending are the effect size of our study.

After specifying which articles had comparable effect sizes, we had to make sure that all the studies were measuring spending by the same increments. The most common unit of measurement was \$100,000, so we changed the coefficients of those studies that used other measures. In addition, because the studies took place over a wide range of time, the earliest taking place in 1978 and the most recent in 2000, we had to adjust the coefficients for inflation as the purchasing power of \$100,000 has changed dramatically. To do this, we used the Consumer Price Index Inflation Calculator provided on the U.S. Department of Labor Bureau of Statistics' website.

Finally, we had to ensure that all the studies had the same dependent variable, as some of them measured vote share as incumbent's share of the vote and others measured it in terms of challenger's share of the vote. Because more studies used challenger's percentage of the vote share, we adopted that as our standard, and we modified all the coefficients of the studies that had used incumbent percentage of the vote by switching the signs on the coefficients (from negative to positive, and vice versa). We made the assumption that these elections were primarily two-party elections, and that if there was a third candidate that he/she was not a major vote-winner. However, to correct for any potential problems in making this assumption, we included a moderator variable for two-party vs. total vote.

#### Conducting the Meta-Analysis

The body of literature on campaign finance suggests that the effect of spending varies greatly depending on whether or not the candidate is a challenger or an incumbent; therefore we conduct two meta-analyses, one for each type of candidate. These meta-analyses consisted of three parts: 1) calculating the effect sizes, 2) explaining moderator variables and running regressions on their effects on the effect size, and 3) performing hypothesis tests using Fisher's inverse chi-square methods to test for the significance of our results.

## Results

#### A Review of the Studies' Methodologies

After conducting a very thorough review of the literature, eliminating all studies that asked different questions than we did, we were left with the universe of applicable studies on the effect on campaign spending on vote share. Because we have combined several different studies, each with a different methodological approach, we have ensured that our meta-analysis is as unlikely to be methodologically flawed as possible. We have chronicled the factors that make each of the articles in our study unique.

Researchers Donald Green and Jonathan Krasno, in their study "Salvation for the Spendthrift Incumbent: Reestimating the Effects of Campaign Spending in House Elections" (1988) made what seems to be the most valuable contribution to the body of literature on this topic. Like many other studies, they piggy-backed off Jacobson's earlier work. They argue that many of the earlier studies underestimate the effect of incumbent expenditures because they do not control for the quality of the challenger. While some studies preceding Green and Krasno's work did account for candidate quality, they often only used a binary variable. Green and Krasno were the first to come up with a complex 7 point ranking system accounting for a number of factors that affect candidate quality.<sup>11</sup>

Political theorist Scott Thomas creates a unique theory regarding campaign spending before running his regression. He simplifies the issue of campaign spending by assuming that the primary way that spending affects vote share is by advertising. He assumes that in general, challengers utilize attack ads. Since challengers generally do not

<sup>&</sup>lt;sup>11</sup> Green, Donald P., and Jonathan S. Krasno. 1988. "Salvation for the Spendthrift Incumbent: Reestimating the Effects of Campaign Spending in House Elections." <u>American Journal of Political Science</u> 32, no. 4: 884-907.

have much political experience to be attacked on, incumbents generally simply send rebuttals to their opponent's attack ads. The ads only affect undecided voters. In this way, only the challenger stands to gain from spending more money. The incumbent cannot gain votes by sending rebuttals; he/she can only hope to hold his/her ground. Thomas tests his hypothesis in two separate years of U.S. House elections (1978 and 1980).<sup>12</sup>

Researchers David Breaux and Anthony Gierzynski made a valuable contribution to the literature by studying spending across various states in state legislative elections.<sup>13</sup> Researchers Ansolabehere and Gerber also contribute to the ideas on campaign spending by showing that it is not all money that matters, but simply the money that is spent on outreach to voters. That is, spending more money on furniture in campaign office headquarters would not affect either candidate's vote share. They show that simply focusing on voter outreach activities spending is a more accurate gauge of the way money affects vote share.

With the exception of presidential elections, academic articles have been written on a wide range of election types. There is plenty of literature on both national and state legislature elections. The theories proposed in the literature have also been tested on more local elections by Timothy Krebs, who looks at city council elections.<sup>14</sup>

Researcher Woojin Moon contributes to the literature by arguing that money only matters in competitive elections.<sup>15</sup> In these elections there are swing votes to be gained

<sup>&</sup>lt;sup>12</sup> Thomas, Scott J. 1989. "Do Incumbent Campaign Expenditures Matter?" <u>The Journal of Politics</u> 51, no. 4:965-976.

<sup>&</sup>lt;sup>13</sup> Gierzynski, Anthony, and David Breaux. 1991. "Money and Votes in State Legislative Elections." <u>Legislative Studies Quarterly</u> 16, no. 2:203-217.

<sup>&</sup>lt;sup>14</sup> Krebs, Timothy B. 1998. "The determinants of candidates' vote share and the advantages of incumbency in city council elections." <u>American Journal of Political Science</u> 42, no. 3:921-935.

<sup>&</sup>lt;sup>15</sup> Moon, Woojin. 2006. "The Paradox of Less Effective Incumbent Spending: Theory and Tests." <u>British</u> Journal of Political Science 36, no. pt 4:705-721.

by either candidate. In elections where most voters do not consider themselves to be swing voters, money does not matter because voters will not change their votes as a result of money spent by either candidate. Moon conducts her analysis using a complex model to account for tightness of election.

Simply looking at the arguments proposed in the literature leads to inconclusive results. Thus, a meta-analysis was needed to settle this matter in a scientific way; by including studies that consist of a variety of approaches, the results of the meta-analysis will be sound, in that they will not be biased by any particular study's methodological weaknesses.

# Effect size

In our analysis, we independently measured how incumbent and challenger spending affect the challenger's percentage of the vote share. Both these effect sizes are represented by the coefficients on the variables incumbent spending and challenger spending. That is, the coefficient on incumbent indicates how an additional \$100,000 spent by the incumbent will affect challenger vote share, and the coefficient on challenger indicates how an additional \$100,000 spent by the challenger will affect challenger vote share. To combine the statistical power of all of these individual studies, we calculated the average of the coefficients for incumbent spending and challenger spending. The 16 included studies consist of a total sample size of 2,271.<sup>16</sup> The average coefficient for incumbent spending is 0.0101 and the average coefficient for challenger spending is 0.9934. Please refer to Appendix 1 for complete calculations.

<sup>&</sup>lt;sup>16</sup> Note: although there were 16 studies in total, only 15 studies had a coefficient for challenger spending. Thus the total sample size for challenger spending is 2,124.

In order to account for the fact that some studies have larger sample sizes than other studies, we also calculated a weighted average of the coefficients, weighing each coefficient by its respective sample size. This resulted in larger effect sizes for both incumbent spending and challenger spending. The weighted coefficient for incumbent spending is 0.1292 and the weighted coefficient for challenger spending is 1.3099. This indicates that for every additional \$100,000 that an incumbent spends, the challenger will *gain* 0.1292 percent of the vote share, and for every additional \$100,000 the challenger spends, he/she will gain 1.3099 percent of the vote share.

To determine if the decisions we made along the way to eliminate studies with incomparable measures from our meta-analysis' effect measure affected our results, we went back to compare our results with these studies. One of the most theoretically valid methodologies that had to be eliminated was by studies that used the log of spending as the independent variable. There were two such studies in our universe: Alan Gerber's "Estimating the Effect of Campaign Spending on Senate Election Outcomes Using Instrumental Variables"<sup>17</sup> and Randal Partin's "Assessing the Impact of Campaign Spending on Governor's Races."<sup>18</sup> These studies assumed a nonlinear relationship between spending and vote share. That is, that the billionth dollar that a candidate spends does not buy him or her as many votes as the first dollar. Gerber's study found that spending actually helps both incumbents and challengers, though it helps challengers much more. Gerber's coefficients in 2007 dollars were 16.8 for challenger spending and

<sup>&</sup>lt;sup>17</sup> Gerber, Alan. 1998. Estimating the Effect of Campaign Spending on Senate Election Outcomes Using Instrumental Variables. *American Political Science Review, Vol.92, Issue 2, p.401* 92, no. 2:401.

<sup>&</sup>lt;sup>18</sup> Partin, Randall W. 2002. Assessing the Impact of Campaign Spending in Governors' Races. *Political Research Quarterly* 55, no. 1:213-233.

-9.13 for incumbent spending. Both coefficients were statistically significant at the .01 level. Partin's study also looks at a nonlinear relationship, however his study is also incompatible with ours because he looks at spending per voter rather than overall spending. He too finds that both incumbent and challenger spending matters but incumbent spending matters much less. His coefficients in 2007 dollars were 5.15 for challenger spending and -2.126 for incumbent spending. Because of the varying nature of these studies' methodologies, the magnitude of the coefficients cannot be compared to those found in our meta-analysis, however the relationship between incumbent and challenger spending in each of these studies is important. The somewhat divergent results between these two studies and our own meta-analysis indicates that more research is necessary. Because these are only two studies, they cannot hold as much weight as a meta-analysis, however as more political scientists ascribe to the theory that there might be a nonlinear relationship between spending and vote share, more studies will be completed. Eventually it will be possible to perform a meta-analysis on this model as well.

#### Moderator Variables

After determining effect size, we identified certain moderator variables that may affect the direction or strength of the relationship between campaign spending and share of the two-party vote. These variables are important because they identify differences among the studies that may have an influence on the effect size. To measure how these variables affected the effect size, correlation analyses were run. To account for their significance levels, regression analysis was conducted and the p-values were abstracted from the results and applied to the correlation results. A common argument used by those opposed to campaign finance laws is that it is not money that matters, but the quality of the candidate. Throughout our research we noticed that some studies accounted for this by including a Candidate Quality variable, while others did not. We hypothesized that if studies included this variable, then the effect size would be smaller because less of the variance in vote share would be attributed to candidate spending. After running a correlation analysis, we did get negative results, but, as seen in Appendix 2, these correlations are so weak that in political science they would be said to not exist, and furthermore, are insignificant.

Another difference in the studies was their measure of vote share. Some of the studies used percentage of the total vote as the dependent variable, while others specified percentage of the two party vote. For this analysis, they were considered comparable measures, but to test to see if there was any correlation between these measures and the effect sizes of the studies a "vote share" variable was included to measure this. After running the correlation analysis, a strong and significant correlation between Incumbent Spending and the "vote share" variable was found, suggesting that studies that used two-party vote share as the dependent variable had higher effect sizes. This makes intuitive sense because including a third party would detract from the percentage of the vote share, giving a more specific number, thereby correcting for overestimation problems that may occur in "two party vote" measures. The results for Challenger Spending and the third party variable were weak and insignificant.

The last variable included was an "Election variable" to test for any correlation between local versus federal election and effect sizes. The correlation analysis showed weak correlations for both challenger and incumbent spending, though the correlation between incumbent spending and election type was significant.

## Significance of Effect Size

The next step in our analysis was to determine whether or not the effect size we found could be explained by chance alone. In order to determine the significance of our results, we performed a hypothesis test using Fisher's inverse chi-square method. First, we separated the p-values of those studies that had positive effect sizes from those that had negative effect sizes. This prevented the possibility that a highly significant p-value from a negative study be used to conclude that a positive effect size is significant. After we had separated the p-values for positive and negative effect sizes, we found that for incumbent spending we had 9 total studies, five of which had positive effect sizes and four of which had negative effect sizes. For challenger spending we had 13 total studies, all of which were positive. The disparity between the number of studies we included when we performed our hypothesis test, and the number that were included in determining our effect size, can be explained by the fact that seven studies did not report a p-value, or any of the information that would have allowed us to calculate a p-value, such as a standard error or a t-statistic. We proceeded as if those studies did not exist during our hypothesis testing, and would suggest recalculating significance levels in future research.<sup>19</sup> Next, we multiplied our p-values by negative two times their natural log, and added them together. The values that we found were then compared to the critical values of the chi-squared distribution to determine their significance. As illustrated in Appendix 3I, we found the positive effect size for incumbent spending was

<sup>&</sup>lt;sup>19</sup> Note: We attempted to contact the authors to obtain p-values but none of the authors replied.

significant at a level of less than 0.001, whereas the negative effect size for incumbent spending was not significant at a level of 0.05. The same was true for challenger spending, where, as is shown in Appendix 3C, the positive effect size was significant at a level of less than 0.001. We did not have any studies that indicated a negative effect size for challenger spending.

## Conclusion

According to our results, for every additional \$100,000 that an incumbent spends, the challenger will *gain* 0.1292 percent of the vote share, and for every additional \$100,000 the challenger spends he/she will gain 1.3099 percent of the vote share. To put these numbers into context, the average cost of winning a 2006 House race was about \$966,000, based on pre-election finance reports, and \$7.8 million for a Senate seat, making 2006 the most expensive mid-term election to date.<sup>20</sup> Successful House challengers had raised \$1.5 million by mid-October, compared to the \$2.2 million raised by defeated incumbents.<sup>21</sup> A \$100,000 increase can be a substantial portion of challenger spending, though election costs vary greatly by state.

After testing for the significance of our results, we found the positive effect size for incumbent spending was significant at a level of less than 0.001, whereas the negative effect size for incumbent spending was not significant at a level of 0.05. This means that the more incumbents spend, the more challengers' percentage of the vote share increases. The positive effect size on challenger spending was also significant at a level of less than

<sup>&</sup>lt;sup>20</sup> Center for Responsive Politics, "Incumbents Linked to Corruption Lose, But Money Still Wins." 8 Nov. 2006

<sup>&</sup>lt;http://www.opensecrets.org/pressreleases/2006/PostElection.11.8.asp>

<sup>&</sup>lt;sup>21</sup> ibid

.001, suggesting that challengers benefit from increasing their spending. These shocking results suggest that money actually works against incumbents, though not to a large degree, and that money helps challengers. This sheds some light on the "conspiracy theory" that elections are corrupt because incumbents always win.

One interpretation of these results is that perhaps the reason that money has such a small effect on percentage of the vote share is because incumbents have so many other advantages that money just does not have as much importance. Things such as name recognition, constituent familiarity with the candidate, connections, and reputation can perhaps have a trumping effect over any monetary advantage a challenger may have. In the 2006 elections, 94 percent of House incumbents and 79 percent of senators won reelection.<sup>22</sup> With these shocking statistics, one may infer that with that kind of advantage, an incumbent does not need to spend money, and if they do, it may be seen as a sign of weakness or vulnerability.

With the statistical power of a meta-analysis, we have been able to offer some concrete evidence that the role of money in elections is beneficial to those who challenge incumbents, but not the other way around. These results have very real implications for campaign finance reform. If campaign spending continues to be limited in a way that affects incumbents and challengers equally, then rather than leveling the playing field, it is systematically hurting challengers, and taking away one of the few advantages they have. Contrary to one's intuition, in order to have fair campaign finance laws they must be unequal in nature. Because the playing field is already so uneven for challengers, in order to balance it, their funding must not be limited in the same way as incumbents'

<sup>&</sup>lt;sup>22</sup> Center for Responsive Politics, "Incumbents Linked to Corruption Lose, but Money Still Wins." 8 Nov. 2006 < http://www.opensecrets.org/pressreleases/2006/PostElection.11.8.asp>

funding is. In order to give challengers a more viable chance to beat incumbents, and to work towards real democracy, challenger campaigns should be publicly subsidized. For challengers that independently pass some popularity threshold (ie- gathering a certain number of signatures), some form of public financing should be used to put them at equal footing with their incumbent opponents. Challenger campaigns should be subsidized just to the extent that is necessary to make them viable candidates. This amount varies from state to state and by election type. Without challengers having to worry about raising enough money just to stay afloat, campaigns can center around the issues.

Finally, on an optimistic note, these results suggest that money is not as pervasive in politics as is commonly assumed. Incumbents do not depend on lobbyists and financial contributions for their re-elections and are thereby freer than most people think to vote according to their own ideology, their conscience, or the needs of their constituents. However, what is important is not the role that money actually plays for incumbents, but the role incumbents think it plays. That is, if incumbents continue to believe that money is so important, and that it is necessary for re-election, they will act accordingly, and vote in ways that ensure continued support from big funders. If incumbents believe the empirical research that money is not one of the many advantages they have over challengers, they will vote according to their ideology and for their constituents.

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	IncumbentChallengerCoefficientsCoefficientsSamplein 2007SizeDollarsdollars		Challenger Coefficients in 2007 dollars	(incumbent coefficient) x (sample size)	(challenger coefficient) x (sample size)	
Ansolabehere;	0.5.6					
Gerber	256	0.0071	0.2292	1.8176	58.6752	
Breaux;						
Gierzynski	<b>C A</b>	0.042	0 7054	2 752		
(California)	64	-0.043	0.7854	-2./52	50.2656	
Breaux;						
(Colorado)	30	_0 0144	1 31/6	-22 432	20 / 28	
Broaux		-0.9144	1.5140	-27.432	55.450	
Gierzynski						
(Indiana)	74	0.043	0 6863	3 182	50 7862	
Breaux	, , ,	0.013	0.0005	5.102	50.7002	
Gierzynski						
(Minnesota)	105	-0.0318	0.8116	-3.339	85.218	
Breaux;						
Gierzynski						
(New York)	115	-0.2151	0.4376	-24.7365	50.324	
Breaux;						
Gierzynski						
(Missouri)	51	0.0187	0.7808	0.9537	39.8208	
Breaux;						
Gierzynski						
(Oregon)	46	0.2674	0.4021	12.3004	18.4966	
Breaux;						
Gierzynski	70	0.0711	0 50 40	F F 4 F 0	20.2022	
(wasnington)	/8	-0.0/11	0.5049	-5.5458	39.3822	
Breaux;						
Gierzyński (Wisconsin)	60	0 1204	0 0257	0 5406	62 0722	
(WISCONSIII)	09	-0.1364	0.9237	-9.5490	03.0733	
Krasno	289	-0 0284	0 1323	-8 2076	38 2347	
Krehs	147	-1 35	0.1525	-198 45	0	
Moon	353	-3 7922	3 8826	-1338 6466	1370 5578	
Thomas	291	3 76	3 0129	1094 16	876 7539	
Thomas	303	2 6394	0.001	799 7382	0 303	
Total sample		210001	01001	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	01000	
size	2271					
Unweighted						
Coefficients		0.01008	0.99335714			
Weighted						
Coefficients				0.129235051	1.309853719	

Appendix 1: Mean Effect Size Calculations

	Incumbent Coefficients	Challenger Coefficient
Control for Candidate Quality	-0.01	-0.22
Election Type	0.22**	0.32
Vote Share	.78*	0.20

# **Appendix 2: Moderator Variable Correlations**

\* p< .05 \*\* p< .001

	Incumbent Spending	P-Value		
Study	(Coefficient)	Incumbent	LOG (positive)	LOG (negative)
Ansolabehere;				
Gerber	0.0045	0.008	9.65662747	
Breaux;				
Gierzynski				
(California)	-0.023	0.049		6.031869962
Breaux;				
Gierzynski				
(Colorado)	-0.489	0.049	6.03186996	6.031869962
Breaux;				
Gierzynski				
(Indiana)	0.023	NR		
Breaux;				
Gierzynski				
(Minnesota)	0.017	NR		
Breaux;				
Gierzynski				
(New York)	0.115	0.049	6.03186996	
Breaux;				
Gierzynski				
(Missouri)	0.01	NR		
Breaux;				
Gierzynski				
(Oregon)	0.143	NR		
Breaux;				
Gierzynski				
(Washington)	0.038	NR		
Breaux:				
Gierzynski				
(Wisconsin)	0.074	NR		
Green and				
Krasno		0 1336		4 025810036
Krasho	-0.009	0.1550		4.023810030
Krebs	-0.01	0.049		6.031869962
Moon	-2.809	0.0001		18.42068074
Thomas	0.0151	0.0038	11.1455084	
Thomas	0.0106	0.0006	14.8371618	
		SUM:	47.7030376	22.12141992
		<b>2K:</b> 18		
		Chi-Squared		
		Value		Not significant
		(Significance):	<.001	at .05 level.

Appendix 31: Chi-squared Calculations for Incumbent

	Challenger Spending			LOG
Study	(Coefficient)	P-Value Challenger	LOG (positive)	(negative)
Ansolabehere;	0.0146	0.0002	17 02/28628	
Broouv:	0.0140	0.0002	17.05458058	
Gierzynski				
(California)	0.42	0.049	6.031869962	
Breaux.	0.12	0.019	0.051007702	
Gierzynski				
(Colorado)	0.703	0.049	6.031869962	
Breaux.				
Gierzvnski				
(Indiana)	0.367	0.049	6.031869962	
Breaux;				
Gierzynski				
(Minnesota)	0.434	0.049	6.031869962	
Breaux;				
Gierzynski				
(New York)	0.234	0.049	6.031869962	
Breaux;				
Gierzynski				
(Missouri)	0.384	0.049	6.031869962	
Breaux;				
Gierzynski				
(Oregon)	0.215	NR		
Breaux;				
Gierzynski				
(Washington)	0.274	0.049	6.031869962	
Breaux;				
Gierzynski		0.040	<	
(Wisconsin)	0.495	0.049	6.031869962	
Green and		0.0001		
Krasno	0.042	0.0001	18.42068074	
Krebs				
Moon	2.876	0.0001	18.42068074	
Thomas	0.0121	0.0872	4.879101896	
Thomas	0.0004	0.9362	0.1318523	
		SUM:	107.1416618	N/A
		<b>2K:</b> 26		N/A
		Chi-Squared Value		
		(Significance):	<.001	N/A

Appendix 3C: Chi-squared Calculations for Challenger

Appendix 4: Codebook

Author	Title	Sample Size	Sample Type	Time	Type of Candidate	Type of Elect.	Regres s. Used	IV of Interest	Measure of DV
Ansolabeher e; Gerber	The Mismeasure of Campaign Spending: Evidence from the 1990 U.S. House Elections	256	Cross- section	1990	Incumbent and challenger	House	Total Spendin g (Column 1)	Incumben t spending and Challenger Spending (in \$100,000)	Incumbent s Vote share
Breaux; Gierzynski	Money and Votes in State Legislative Elections	64	Cross- section	1986	I and C	State house races	Californi a	challenger and incumbent spending per \$100,000	challenger' s vote share (%)
Breaux; Gierzynski	Money and Votes in State Legislative Elections	30	Cross- section	1986	I and C	State house races	Colorad o	challenger and incumbent spending per \$100,000	challenger' s vote share (%)
Breaux; Gierzynski	Money and Votes in State Legislative Elections	74	Cross- section	1986	I and C	State house races	Indiana	challenger and incumbent spending per \$100,000	challenger' s vote share (%)
Breaux; Gierzynski	Money and Votes in State Legislative Elections	105	Cross- section	1986	I and C	State house races	Minneso ta	challenger and incumbent spending per \$100,000	challenger' s vote share (%)
Breaux; Gierzynski	Money and Votes in State Legislative Elections	115	Cross- section	1986	I and C	State house races	New York	challenger and incumbent spending per \$100,000	challenger' s vote share (%)
Breaux; Gierzynski	Money and Votes in State Legislative Elections	51	Cross- section	1986	I and C	State house races	Missouri	challenger and incumbent spending per \$100,000	challenger' s vote share (%)
Breaux; Gierzynski	Money and Votes in State Legislative Elections	46	Cross- section	1986	I and C	State house races	Oregon	challenger and incumbent spending per \$100,000	challenger' s vote share (%)
Breaux; Gierzynski	Money and Votes in State Legislative Elections	78	Cross- section	1986	I and C	State house races	Washing ton	challenger and incumbent spending per \$100,000	challenger' s vote share (%)

Author	Title	Sample Size	Sample Type	Time	Type of Candidate	Type of Elect.	Regres s. Used	IV of Interest	Measure of DV
Breaux; Gierzynski	Money and Votes in State Legislative Elections	69	Cross- section	1986	I and C	State house races	Wiscons	challenger and incumbent spending per \$100,000	challenger' s vote share (%)
Green and Krasno	Salvation for the Spendthrift Incumbent: Reestimatin g the effect of campaign spending on House Elections	289	Cross- section	1978	Incumbent	House	Table 2 - Jacobso n's Model with challeng er quality index	Incumben t expenditur es, challenger expenditur es (in 100 thousand)	Challenger' s vote share
Krebs	The Determinant s of Candidates' Vote Share and the Advantages of Incumbency in City Council Elections	147	Time	1979-	Incumbent	Chica go City Counc il Electi ons	Table 3	incumbent	Incumbent s Vote share
Moon	The Paradox of Less Effective Incumbent Spending: Theory and Tests	353	Cross	1974- 2000	Both	Senat e Electi ons	Table 2	challenger and incumbent spending	Incumbent Vote Share
Thomas	"Do Incumbent Campaign Expenditures Matter?"	291	Cross- section	1978	incumbent/ challenger	US House of Repre sentat ives	table 1 - first column	I: Spening in thousands , C: spending in thousands	Challenger s percentage of the two party vote
Thomas	"Do Incumbent Campaign Expenditures Matter?"	303	Cross- section	1980	incumbent/ challenger	US House of Repre sentat ives	table 1 - second column	I: Spening in thousands , C: spending in thousands	Challenger s percentage of the two party vote

			Incumbent	Challenger			
Author	Regression Coefficient	Base Year	Coefficients in 2007 dollars	Coefficients in 2007 dollars	P-value	T-stat	Standard Error
	Unstandardi zed: Incumbent:.					Incumben t: -2.6471;	
Ansolabeher e; Gerber	0045,Challe nger: .0146	1990	0.0071	0.2292		Challenger : -6.0833	I: .0017; C: .0024
Breaux; Gierzynski	Incumbent: 023; Challenger: .420	1986	-0.043	0.7854	0.049		
Breaux; Gierzynski	Incumbent: 489; Challenger: .703	1986	-0.9144	1.3146	0.049		
Breaux; Gierzynski	Incumbent: .023; Challenger: .367	1986	0.043	0.6863	.049 (Challenger only)		
Breaux; Gierzynski	Incumbent: 017; Challenger: .434	1986	-0.0318	0.8116	.049 (Challenger only)		
Breaux; Gierzynski	Incumbent: 115; Challenger: .234	1986	-0.2151	0.4376	0.049		
Breaux; Gierzynski	Incumbent: .010; Challenger: .384	1986	0.0187	0.7808	.049 (Challenger only)		
Breaux; Gierzynski	Incumbent: .143; Challenger: .215	1986	0.2674	0.4021			
Breaux; Gierzynski	Incumbent: 038; Challenger: .274	1986	-0.0711	0.5049	.049 (Challenger only)		
Breaux; Gierzynski	Incumbent: 074; Challenger: .495	1986	-0.1384	0.9257	.049 (Challenger only)		
Green and Krasno	Unstandardi zed: Incumbent: 009, Challenger: .042	1978	-0.0284	0.1323	none	none	Incumbent: .006; Challenger: .006

Author	Regression Coefficient	Base Year	Incumbent Coefficients in 2007 dollars	Challenger Coefficients in 2007 dollars	P-value	T-stat	Standard Error
Krebs	Unstandardi zed: Incumbent: -1	1995	-1.35		.049		0.004
Moon	Unstandardi zed: I: -2.809, C: 2.876	1995	-3.7922	3.8826	0.000, 0.000	-7.20256, 4.06214	
Thomas	Unstandardi zed: Incumbent: 1.51, Challenger: 1.21	1980	3.76	3.0129		I: 2.896, C: 1.709	
Thomas	Unstandardi zed: Incumbent: 1.06, Challenger: .004	1980	2.6394	0.01		I: 3.379, C: .0848	