

# The impact of money on elections: evidence from open seat races in the United States House of Representatives, 1990-2004

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## *Abstract*

A binary win/loss model is constructed and estimated on the results from 1990-2004 contests for open U.S. House seats. The results indicate that election outcomes are highly sensitive to the major-party candidates' campaign spending ratios, and increases in spending ratios are shown to translate into non-trivial increases the candidate's probability of winning, a result that holds for both Republicans and Democrats. The payoff to high levels of spending explains why it's so attractive for candidates to outspend their opponents by large margins.

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“Pointing to millions spent on open-seat contests in recent years, one senior Republican strategist was blunt. ‘Open seats are bought, not won,’ the source said.” (Cillizza, 2007: A04)

## I. Introduction

When incumbents seek re-election to the U.S. House of Representatives, they tend to outspend their opponents. Federal Election Commission (FEC) data for the 2003-04 election cycle show that incumbents outspent their opponents in all but four of the 400 U.S. House races in 2004 where an incumbent sought re-election. The average incumbent spent \$999,000 in seeking re-election, against \$228,000 for the incumbent’s major-party general-election opponent – a ratio of more than 4:1 in favor of the incumbent.<sup>1</sup>

Incumbents seeking re-election also tend to win. In the congressional election years from 1998–2004, U.S. House incumbents seeking re-election have won 98% or more of the time.<sup>2</sup> Consequently, it is unclear whether the spending is incidental or causal to victory. Far more competitive are the races where no incumbent is on the ballot – the open-seat contests, which occur when incumbents retire or seek re-election, but lose in the primary, or when new districts are created following a reapportionment. As such, a focus on open-seat races, which is the focus of the current study, serves to disentangle the link between spending and incumbency so that the spending effect is isolated.

The present study also extends the research that has been done on open seat elections (see Gaddie, 1995; Gaddie and Bullock, 2000) by constructing a binary win-loss model that explores the salient issue of elections (i.e., victory/defeat). In doing so, we examine open-seat campaigns for the U.S. House using data from the elections of 1990 to 2004. Also new in study, campaign spending for each open-seat race is modeled as a ratio, and relative spending (by major Party candidates) is then grouped into ranges. A number of other explanatory variables such as party identification, and voting history are included as well.

## II. Literature Review

Though the literature on campaign spending and elections is extensive, relatively little of it has been devoted to open-seat contests. Jacobson (1985) and Abramowitz (1988) reported separate sets of results for open-seat races and races involving an incumbent seeking re-election – Jacobson for 1972-82 U.S. House races and Abramowitz for 1974-86 U.S. Senate races.<sup>3</sup> Both followed the usual approach of modeling candidates’ share of the two-party vote using Ordinary Least Squares.<sup>4</sup> Jacobson’s results were inconclusive, while

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<sup>1</sup> Further magnifying the incumbency spending advantage is the idea in Lott (1991: 91) that “more well known politicians [incumbents] may not have to spend very much to win.”

<sup>2</sup> The lack of serious competition faced by most incumbents seeking re-election has been widely noted in the political media, and there is a long history in the academic literature of attempts to explain it. Additional studies that explain the incumbency advantages include, but are not limited to, Mayhew (1974), Fiorina (1977), Mixon and Upadhyaya (1996, 1997 and 2003), and Levitt and Snyder (1997).

<sup>3</sup> Though both U.S. House and U.S. Senate races have been modeled, U.S. House races tend to be more popular for purposes of analysis because of the larger number of races contested in the House (435 versus approximately 33) in a given election year.

<sup>4</sup> Jacobson also reported a set of Two-Stage Least Squares results for the incumbent-challenger races.

Abramowitz found that the candidates' relative campaign spending and experience were the decisive factors.<sup>5</sup>

Mondak (1993) and Flemming (1995) examined whether open-seat campaigns for the U.S. House exhibit a presidential coattail effect. Both also modeled the two-party vote-share and estimated the model with OLS. Mondak found that for the four presidential elections from 1976 to 1988, the impact of presidential coattails was greater in races for open seats than for seats where an incumbent was running. Flemming obtained a similar finding from examining the five presidential elections from 1972 to 1992. However, in only a few cases – less than 15% of the time – was the coattail effect found to be decisive.<sup>6</sup>

Gaddie (1995) analyzed open-seat U.S. House contests from the standpoint of what was then the Democratic party's control of the legislative body. The two-party vote-share was modeled using OLS. For 1982-92 open-seat U.S. House races, Gaddie found that Democratic candidates received a greater benefit than Republican candidates from previous experience in holding electoral office. Democrats also benefited from the voting tendencies of sizable minority populations in the open-seat districts. For spending, the results were reversed, with Republican candidates receiving a greater boost per \$100,000 of spending than Democratic candidates.

The most comprehensive treatment of open-seat elections, focusing on U.S. House races, is provided by Gaddie and Bullock (2000). Following the conventional approach, they modeled vote-share for open-seat House races from 1982 to 1998 using OLS. Their model included variables for candidates' spending, experience, presidential coattails and demographics. Their findings mirrored those of Gaddie (1995), with Republicans receiving a slightly larger boost per \$100,000 of spending than Democrats. They also report a set of projected election outcomes for the hypothetical case where all 435 House seats became open in the election of 2000. Their results indicated that if every seat were open, and if the presidential vote was split 50/50, the House chamber would break along the lines of a 55 percent-to-45 percent majority favoring the Democrats.

### III. Model and Results

As indicated above, the standard approach in this genre has been to model a candidate's share of the two-party vote in the general election as a function of the candidate's spending and the spending by the candidate's opponent, along with other explanatory variables, and to estimate via Ordinary Least Squares (OLS). Nearly always, spending is found to be a key determinant of vote shares. To test whether spending makes a difference – and how much of a difference – in open-seat elections, our model continues a recent trend of using alternative models. In this case, a binary win-loss model of open-seat campaigns in the U.S. House is constructed and tested.<sup>7</sup> Our model follows the logistic (logit) distribution and takes the form,

$$P(RWIN = 1) = \frac{e^{\beta'x}}{1 + e^{\beta'x}} \quad (1)$$

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<sup>5</sup> The findings of Abramowitz were based on a relatively small sample size of only about 60 open seats in those U.S. Senate election years. The U.S. House findings of Jacobson were from 301 open seats.

<sup>6</sup> Flemming included a spending variable, while Mondak did not.

<sup>7</sup> This approach follows general approach from the Caudill and Godwin (2002) and Caudill (2003) sports economics studies.

where  $RWIN$  is the binary dependent variable,  $X$  is a vector of independent variables, and  $\beta$  is a vector of parameters to be estimated.

The dependent variable in (1) above,  $RWIN$ , assumes a value of 1 if the Republican candidate won the general election, and 0 otherwise (i.e., if the Democratic candidate won the general election). The candidate of interest is the Republican candidate.<sup>8</sup> The choice of the Republican candidate was dictated by the inclusion of a dummy variable for Republicans who ran in 1994, when Republicans regained control of the U.S. House.

Other campaign spending studies have modeled a candidate's share of the vote (usually the two-party vote) rather than the win/loss outcome. The rationale for so doing is that vote-share provides more information as the dependent variable. Why opt for the win/loss outcome instead? We argue that victory, not vote-share maximization, is the typical candidate's goal. Most serious candidates enter elections to win, not to maximize their vote share – especially the major-party candidates who win their party primaries and qualify for the general election.<sup>9</sup> The vote-share model makes no distinction between an extra five percent of the vote that runs up a candidate's vote-share from 70 percent to 75 percent, and the five percentage points that separate 47 percent from 52 percent. To the candidate, this distinction is of primary importance. The win-loss model captures what is arguably the more salient issue – victory – rather than vote-share.<sup>10</sup>

The win/loss outcome of each open-seat election is modeled as a function of a set of independent variables. Each of the independent variables is also expressed in binary form. The key variable is relative campaign spending, which is represented by a seven-variable series of dummy variables. The seven variables correspond to seven ranges for the ratio of spending by the Republican candidate to the Democratic candidate. The ranges are  $< 0.25$ ,  $0.25 - 0.49$ ,  $0.50 - 0.74$ ,  $0.75 - 1.33$ ,  $1.34 - 2.00$ ,  $2.01 - 4.00$ , and  $> 4.00$ . If the spending ratio falls within one of those seven ranges, the variable for that range is assigned a value of 1, and 0 otherwise. In the logit model,  $0.75 - 1.33$  is the omitted range. Note that the ranges are symmetric about the excluded range.<sup>11</sup>

Two additional variables indicate whether the major-party candidates previously held elective office.  $R\ EXPERIENCE$  takes a value of 1 if the Republican candidate had held elective office, and 0 otherwise. Likewise,  $D\ EXPERIENCE$  was assigned a value of 1 if the Democratic candidate previously held elective office, and 0 otherwise. We also include a

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<sup>8</sup> Jacobson (1985), Abramowitz (1988), and Flemming (1995) modeled the dependent variable as the percentage of the two-party vote received by the Democrats' candidate, while Mondak (1993) modeled the share going to the Republicans' candidate.

<sup>9</sup> Conceivably, it could be argued that some incumbents may pursue a strategy of vote-maximization in one election in the hopes of deterring challengers in future elections. For those incumbents, running up the vote totals now might mean less likelihood of a serious challenger later on. When it comes to the open-seat races, though, there's no incumbent and no candidate enjoys that luxury.

<sup>10</sup> Politicians love football analogies, and legendary football coach Vince Lombardi has been famously quoted as saying, "winning isn't everything, it's the only thing." As famous as the quote is, it is actually misquoted in this passage. What Lombardi said was, "winning isn't everything, but making the effort to win is."

<sup>11</sup> The bottom ratio is the reciprocal of the top ratio, the number-two ratio is the reciprocal of the number-six ratio, and the number-three ratio is the reciprocal of the number-five ratio. While the symmetry in the spending series is a nice feature, and the logit model is appropriate for identifying diminishing (or negative) marginal returns to campaign spending, we are unable to interpret any results on marginal returns because the spending bin ranges are not all of equal size. In particular, the outer bins – where either the Republican or Democrat is outspent by more than 4:1 – include everything from the 4:1 cutoff all the way to zero (infinity). The ranges for the interior bins are much smaller. These particular bins were used because they resulted in equal (roughly) numbers of observations and each bin contained Republicans who both won and lost.

variable that reflects the district's recent voting history, capturing any carry-over effects from the district's identification with the seat's previous occupant. R SEAT is assigned a value of 1 if the seat had been occupied by a Republican, and 0 otherwise.

The existence of a presidential-election coattail effect is captured by the variable, TOP-OF-TICKET. In presidential-election years, it assumes a value of 1 if the U.S. House candidate was identified with the party of the presidential candidate who received the most votes in that district, and 0 otherwise. This permits a coattail effect even from a losing presidential candidate. For example, in the presidential election of 1996, the home-state candidacy of Senator Robert J. Dole may have boosted the Republican turnout in Kansas, even though Dole lost the presidential election to William J. Clinton. The stimulus to the Republican turnout may, in turn, have helped Republican candidates for that state's U.S. House seats. The coattail variables in Mondak (1993) and Flemming (1995) reflected identification with the winning presidential candidate.<sup>12</sup>

The remaining two variables are 1994 GOP and NEW DISTRICT. The former captures the effect of the Republican landslide election of 1994. It assumes a value of 1 for all 1994 observations on Republican party candidates, and 0 otherwise. NEW DISTRICT is assigned a value of 1 for elections involving a newly created Congressional produced by a recent U.S. Census and for the gerrymandering-related instances of redistricting that occurred in Texas in 2004, and 0 otherwise.

The model was tested on data from the eight U.S. House election years, from 1990 to 2004.<sup>13</sup> Those eight elections include four presidential elections and four mid-term elections. The election results for each open-seat race were taken from the official records maintained by the Office of the Clerk of the U.S. House of Representatives.<sup>14</sup> The candidates' spending totals and other characteristics were retrieved from *The Almanac of American Politics*.

The maximum-likelihood estimates from the logit model are presented in Table 2. All six of the spending-ratio variables are statistically significant. As expected, the coefficients are negative for the variables with ratios of less than one (i.e., when the Republican candidate was outspent), and positive for the variables with ratios of greater than one (i.e., when the Republican candidate outspent the Democratic candidate). It is also encouraging to note that the campaign spending variables series exhibits the expected monotonic trend, suggesting that larger spending ratios yield a payoff in terms of a higher probability of victory.

The results also suggest that even when the top-spending candidate is already outspending the other by a significant margin, additional spending continues to increase, by non-trivial increments, that candidate's probability of victory. Republican candidates who outspend their opponents by a ratio of greater than 4:1, versus a ratio of between 2:1 and 4:1, raised their probability of winning by an additional 7.4 percentage points.<sup>15</sup> Conversely, when Democratic candidates outspend their opponents by a ratio of greater than 4:1, versus a ratio of between 2:1 and 4:1, or when the Republican spend less than 25 percent as much

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<sup>12</sup> One might also argue that TOP-OF-TICKET captures the congruence between the candidate's party and the partisanship of the district.

<sup>13</sup> Again, election counts are shown (for each election cycle) in Table 1. The lack of campaign spending by one candidate in 22 of these 371 open-seat races necessitated omission of these 22 observations.

<sup>14</sup> Those records are available at [www.clerk.house.gov](http://www.clerk.house.gov).

<sup>15</sup> The analysis here assumes that the political variables (i.e., R EXPERIENCE, D EXPERIENCE, R SEAT, TOP-OF-TICKET, 1994 GOP, and NEW DISTRICT) are held at their mean values, while the spending series variables not under consideration are restricted to zero. The means for the political variables are drawn from the original 371 observations.

as the Democrat, instead of between 25 percent and 50 percent, the Republicans' probability of victory is 18.3 percentage points lower. This suggests that additional spending by the top-spending candidate – Republican or Democratic – continues to yield a non-trivial payoff in terms of the probability of victory.

The results above show that when Republicans outspend Democrats, additional spending by Republicans has a smaller effect than additional spending by Democrats when Democrats outspend Republicans. Republicans' chances of victory rise when they outspend Democrats, but they fall by more when the tables are turned and Democrats outspend Republicans by similar margins. This may have to do with spending and turnout. As a general rule, low-turnout elections favor Republicans and high-turnout elections favor Democrats. It follows that higher levels of spending by Democratic candidates would have the potential to yield a greater boost to their chances of victory than higher spending by Republican candidates.

While similar regressors for Republicans' and Democrats' experience were found by Gaddie and Bullock (2000) to have coefficients that were statistically significant, their results were based on the 1982-1998 open-seat races. The coefficients on the two experience variables in our model (R EXPERIENCE and D EXPERIENCE) displayed the expected signs. However, unlike the Gaddie and Bullock (2000) results, evidence from the 1990-2004 open-seat races presented here indicates that prior experience in elective office is not statistically significant.

The variable that related to the district's recent voting history, R SEAT was statistically significant. Republicans who were running for seats whose last occupant had been a Republican could, *ceteris paribus*, expect a 21.6 percentage point greater probability of victory than Republicans not in this category.<sup>16</sup> This suggests that the open-seat's recent party identification is an important characteristic (i.e., voters vote their party identification).

The statistically significant coefficient on the TOP-OF-TICKET variable indicates that presidential elections have a sizable coattail effect on open-seat elections. Open-seat U.S. House candidates from the same party as the presidential candidate who won that U.S. House district could expect a 26.1 percentage point increase the probability of winning vis-à-vis candidates not in this category, *ceteris paribus*.<sup>17</sup> Victorious presidential candidates usually see their party gain seats in Congress.<sup>18</sup> The effect held regardless of whether or not the presidential candidate who won a particular U.S. House district was also the Electoral College winner.

The impact of national political trends is evident in the statistically significant coefficient on the 1994 G.O.P. variable. Candidates running as Republicans in 1994, when the G.O.P. regained control of both houses of Congress, enjoyed a considerable advantage. The result shows that Republicans running for open-seats in 1994 could expect a 30 percentage point greater probability of winning than other Republicans, all else equal.<sup>19</sup> Republicans won 38 of the 51 (i.e., 74.5 percent) open-seats that were at stake in the U.S. House elections of 1994. Finally, no effect was found for new U.S. House districts that were created following a census (i.e., the coefficient on NEW DISTRICT is not statistically significant).

As pointed out above, our sample of open seat races includes races in districts whose lines were redrawn to reflect the Censuses of 1990 and 2000, and in 2004 Texas, where

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<sup>16</sup> This estimate is obtained with the campaign spending variables set to zero, and the political variables (other than R SEAT) held at their respective means.

<sup>17</sup> This estimate was obtained using the same procedure above for R SEAT.

<sup>18</sup> Republicans gained seven U.S. House seats when President George W. Bush was re-elected in 2004.

<sup>19</sup> This estimate was obtained using the same procedure above for R SEAT.

districts were redrawn by a Republican Congressional majority in order to reverse past Democratic gerrymandering in that state.<sup>20</sup> Because Congressional redistricting could potentially impact our analysis of open seats election outcomes beyond the ability of NEW DISTRICT to capture that potential impact, whether the redistricting is the result of gerrymandering or was simply required due to the results of a recent Census, we considered (below) a version of our model that omits both the 1992 and 2002 data for open seats contests in the new House districts that emerged from the 1990 and 2000 Census results, and all of the 2004 data for Texas.<sup>21</sup> These results are shown in Table 3 below.

As indicated by Table 3, the exclusion of the data reflecting states' redistricting efforts, along with the variable NEW DISTRICT, has little effect on the other regressors in our model. All six of the regressors in the spending ratios series retain the same signs as in the Table 2 results, and again they are all significant at the 95 percent confidence level. Additionally, RSEAT, TOP-OF-TICKET and 1994 GOP all retain positively signed coefficients, and each is significant at the 95 percent level of confidence. These results also replicate those shown in Table 2, suggesting that any impact on our main results that is due to redistricting is minor at best.

#### IV. Concluding Comments

While open seats comprise only a small fraction – on average about 10 percent – of the U.S. House seats that are at stake every two years, they represent a disproportionate share of the party turnover. Between 1998 and 2004, more party turnover occurred in the 142 open-seat races than in the other 1,598 races where incumbents sought re-election. With 98 percent of House incumbents now winning their re-election bids, open seat contests arguably provide a more fertile area for examining the impact of spending on election outcomes.

The results from estimating a binary win/loss model on open-seat elections data from 1990-2004 for the U.S. House indicate that those elections' outcomes are highly sensitive to candidates' spending ratios. When one candidate outspends another by 1.33 times or more, that candidate enjoys a higher probability of victory. Still higher spending ratios translate into non-trivial increases in the candidate's probability of winning, a result that holds for both Republicans and Democrats.

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<sup>20</sup> Redistricting outside of Census years, as in 2004 Texas, provides state legislatures with an opportunity to revamp the partisanship of a state's U.S. House delegation. The 2004 redistricting in Texas resulted in seats previously held by Democrats falling into Republicans' hands.

<sup>21</sup> We are grateful to an anonymous referee of this journal for suggesting that we consider this alternative empirical model.

Table 1: Open Seats in U.S. House Elections, 1990-2004

Year	Open Seats
2004	35
2002	49
2000	35
1998	33
1996	50
1994	51
1992	90
1990	28

Table 2: Logit Model Results: Base Sample

Term	Coefficient	Standard Error
Constant	-0.666	0.449
< 0.25	-2.940*	0.671
0.25 – 0.49	-1.587*	0.515
0.50 – 0.74	-1.479*	0.437
1.34 – 2.00	1.165*	0.514
2.01 – 4.00	1.324*	0.572
> 4.0	2.266*	0.783
R EXPERIENCE	0.469	0.338
D EXPERIENCE	-0.215	0.313
R SEAT	0.972*	0.327
TOP-OF-TICKET	1.301*	0.402
1994 GOP	1.722*	0.457
NEW DISTRICT	0.374	0.557
N = 349		
Model $\chi^2 = 201.36^*$		

**Note:** Coefficients significant at 95% confidence level denoted by \*.

Table 3: Logit Model Results: New District Observations Omitted

Term	Coefficient	Standard Error
Constant	-0.759	0.460
< 0.25	-2.656*	0.696
0.25 – 0.49	-1.687*	0.566
0.50 – 0.74	-1.559*	0.460
1.34 – 2.00	1.246*	0.558
2.01 – 4.00	1.194*	0.589
> 4.0	1.974*	0.798
R EXPERIENCE	0.528	0.352
D EXPERIENCE	-0.196	0.328
R SEAT	0.994*	0.331
TOP-OF-TICKET	1.572*	0.427
1994 GOP	1.776*	0.458

N = 310

Model  $\chi^2 = 173.95^*$

**Note:** Coefficients significant at 95% confidence level denoted by \*.

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