

## **The Effect of State Redistricting Methods on Electoral Competition in United States House Races**

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## **Abstract**

Legislative redistricting in the states is highly contentious due to its partisan implications. But does the method by which states draw legislative districts affect partisan competition in the elections that are held in these districts? We examine three methods used by states to draw district boundaries and their effects on competition in congressional elections. Specifically, we evaluate the effects on competition of legislative, judicial, and commission plans enacted prior to the 1992 and 2002 congressional elections. We find that, compared to districts drawn by the state legislature, more competitive elections occur when courts and commissions are directly involved in the redistricting process.

The United States Constitution requires that a census be taken every 10 years to reapportion representation in the House of Representatives. But the Constitution implicitly leaves the drawing of political districts following each census to the states. While the federal courts have defined strict guidelines for drawing these district boundaries, there have been few constraints imposed on the states as to who should actually draw and approve these boundaries. As a result, the states have set the responsibility for this inherently political task to different officials (McDonald 2004). For instance, in some states, such as California, Georgia, and Michigan, state legislatures drew their congressional district boundaries in the 2002 redistricting cycle resulting in partisan gerrymandering. In other states, such as Iowa and Maryland, commissions drew new political districts, with the expectation that these more disinterested commissions would draw more competitive districts. In some additional states, such as Colorado and Pennsylvania legislatures were unable to agree on a congressional redistricting plan, leading to judicial intervention in the process.<sup>1</sup>

Does the method by which districts are drawn affect the competition of the subsequent races in them? With the variety of these methods used in the states, they provide an ideal setting to address this institutional question. We examine the effects of various districting methods on the degree of competition in United States House races after the 1992 and 2002 redistricting cycles. Previous analyses have focused almost exclusively on the partisan effects of redistricting by legislatures (see e.g. Abramowitz 1983 and Niemi and Winsky 1992), but the increased use of redistricting commissions in recent redistricting cycles warrants further attention.<sup>2</sup> Furthermore, the extant literature has largely ignored the electoral implications of court-drawn districting plans. In fact, commissions or courts were responsible for drawing congressional districts in 16 states in 1992 and 17 states in 2002. Since both courts and commissions have fundamentally

different incentives and goals in redistricting than partisan politicians in state legislatures, it is likely that the political results of districts they draw will be distinct, as well. We find that when courts or commissions draw districts, then the elections are more competitive when compared to districts drawn by the legislatures.

### **Electoral Consequences of Redistricting**

Scholars of partisan competition and congressional redistricting have examined both the latter's link to the decline in the number of competitive seats in Congress and its effect on the partisan balance of seats in the House. Mayhew (1971) and Tufte (1973) were among the first to suggest that redistricting could help explain the increase in the incumbency advantage in Congress. Noting a decline in competition in the first election following a redistricting cycle, Tufte (1973) argued that incumbents might influence the redistricting process to save their seats.<sup>3</sup> Other scholars have focused on the effects of redistricting on the aggregate partisan balance of seats in the House. For example, Abramowitz (1983) documented gains by Democratic candidates in the 1982 elections where Democrats controlled the districting process. Niemi and Winsky (1992) extended this research design to the 1970s and found the same effect (see also Born 1985). In contrast, Niemi and Abramowitz (1994) found that party control of the redistricting process in the 1990s yielded little partisan advantage in the 1992 elections.

Cain (1985) moved the discussion forward by considering the differences among various redistricting methods. He identified two types of legislative drawn redistricting plans: partisan and bipartisan. Partisan redistricting, or gerrymandering, is the attempt to deprive the minority party of as many seats as possible. Bipartisan plans passed through the legislative process

generally occur under divided government and they usually are drawn to make incumbents of both partisan as safe as possible (Lyons 2003).

Butler and Cain (1992) and Hirsch (2003) consider alternatives to legislative districting plans, including those drawn by commissions and courts. They argue that commissions and courts focus largely on factors other than partisan politics when redrawing district boundaries, factors such as compactness and partisan fairness, responsiveness, and accountability. Although increased aggregate and district-level competitiveness may not be a manifest goal of commissions, it often turns out to be a byproduct of their efforts. While Butler and Cain (1992) contend that it is more difficult to generalize about the goals of court-drawn plans, they suggest that if courts pursue any one goal, it is protecting the status quo (i.e., incumbency protection). However, they do not test their hypothesis empirically.

### **Does Redistricting Affect Electoral Competitiveness?**

Partisan advantage aside, can redistricting affect electoral competitiveness? To answer this, we must understand the goals of the players involved in the various redistricting methods: state legislators and governors, commissions, and courts. For each redistricting method, we assume these players are rational actors who try to achieve their respective goals. However, different institutional constraints are inherent in the three methods which affect these players' abilities to achieve these goals.<sup>4</sup> When the legislature draws the districts, for instance, it is acting as a continuously functioning legislative body consisting of elected members with their own personal reelection goals and with direct ties to the political parties that have perhaps conflicting goals (Schaffner, Wagner, and Winburn 2004). For example, the Republican Party hired a director of redistricting for the National Republican Congressional committee prior to the 1992

redistricting cycle for the purpose of coordinating districting efforts in the states (Benenson 1990). The interaction of these goals and institutional constraints vary among the redistricting types, and therefore, we expect the outcomes of the processes to differ.

### **Partisan and Bipartisan Redistricting Plans in the Legislature**

Legislatively drawn redistricting plans can be either partisan or bipartisan (Cain 1985). Typically, partisan plans are drawn when one party controls both chambers of the legislature and the governor's office.<sup>5</sup> Bipartisan plans can be the consequence of divided government, which gives each party at least one veto point in the process (Krehbiel 1998).

Actors drawing partisan plans can be thought of as having two goals: to re-elect all of their party's incumbents and to pick up additional seats from the minority party.<sup>6</sup> There are at least two ways the majority party attempts to accomplish these goals. First, the party can pack voters from the minority party into safe districts, perhaps even placing two minority party incumbents in the same district to assure the defeat of one of them. Second, the majority party may dilute the minority party's strength by spreading the latter's supporters among several districts, thereby splintering its support (Butler and Cain 1992). While both of these tactics may increase the competitiveness in certain cases, thus increasing the likelihood that the majority party wins more House seats, they may also tend to decrease competitiveness in the packed districts, leading to an overall result of no change in the degree of competitiveness.<sup>7</sup> Like with bipartisan mapmakers seeking incumbent protection, partisan legislative redistricters are *risk-averse* and want to reduce or maintain the current levels of competition.

Bipartisan plans require a higher degree of consensus to enact than partisan plans since both parties need to be satisfied. But since all legislators can be assumed to have the same

personal goal of reelection (Mayhew 1974), an “incumbency protection” plan may be one that both sides can easily agree upon. With these types of plans then, only small changes in districts will be made to keep constituencies consistent and make representatives safer, within the constraints of legal requirements and demographic shifts. Thus, we expect to see no change in competition under bipartisan plans. In both cases, partisan and bipartisan, the actors are primarily concerned with maintaining the status quo and we expect little to no change in the competitiveness of seats drawn by legislatures. For these reasons, we will combine these two types of plans in our analysis below.

### **Commission- and Court-Drawn Districting Plans**

Redistricting commissions and courts are not subject to the same electoral and institutional constraints in the redistricting process as are state legislators.<sup>8</sup> In some cases, commissioners are not elected officials, and in others, they are not even allowed to hold elected office for a number of years after the districting cycle. In such cases, the personal ambition motivation is absent from the process. However, there are states where commissions are made up of state legislators and the governor’s representatives.<sup>9</sup> For example in Indiana and Minnesota, commissioners were selected from the legislature, while other states, like Hawaii or Idaho, did not allow elected representatives to exercise any influence in the redistricting process. Since commissions are to some degree separate from the direct control of the legislature the districts they draw, should differ from those drawn by state legislatures.

In addition to the selection procedures, commissioners are also subject to a variety of institutional constraints in the redistricting process such as when they are formed, tie-breaking rules, overriding objectives, and deadlines for submitting completed plans (Butler and Cain

1992). For example, in Hawaii, the districts are not allowed to “unduly favor a person or political faction.”<sup>10</sup> In Iowa, the nonpartisan Legislative Services Bureau was not allowed to use party registration data or consider the home of incumbents (Butler and Cain 1992). In California, the commission was required to stress compactness and community interests, while in Florida, the commission was required to ignore the hometowns of the incumbent members of Congress.

Without the ability or inclination to use partisan measures, it is unlikely that changes in the district will reflect an increase in incumbency protection. Moreover, the overriding goals of the commissions and their relative independence from the legislature should produce more “fair” and hence more competitive districts at either the state or congressional level (Kubin 1996-97). Therefore, we expect competition to increase, relative to legislative drawn plans, when they draw the boundaries.<sup>11</sup> Our analysis in this paper allows us to test this hypothesis explicitly.

Similarly, the courts do not endure the same selection processes and constraints as state legislatures. First, we argue that the judicial selection process may affect the degree of partisanship in redistricting when the courts are asked to resolve disputes. Judges may find their way to the bench through partisan elections, non-partisan elections, appointments, or hybrid merit plans (Hall 2001). In 10 of the 14 cases with judicial plans, a panels of appointed federal judges approved plans, and in the others, the state courts did so. Since many of the judges do not have an electoral connection in the redistricting process, they may feel less pressured to protect incumbents are free to make large changes in districts. Second, justices may also feel compelled to follow “fairness” guidelines similar to commissions. For these reasons, we expect to find that court-drawn plans will be more competitive relative to legislative plans.

That being said, congressional districts drawn by either courts or commissions should increase the degree of partisan competition because they have less of an incentive to draw districts to promote incumbency protection.

### **Data and Methods**

We test our hypotheses with data covering the redistricting cycles prior to the 1992 and 2002 congressional elections. We employ a dichotomous dependent variable for competitiveness, coded 1 when the winning candidate received less than 60 percent of the two-party vote in the election subsequent to redistricting, 0 otherwise. This measure of competition and marginality is commonly employed in the congressional elections (Jacobson 2004) and redistricting (Mayhew 1974, Ferejohn 1977, Cox and Katz 2002) literature.<sup>12</sup>

[Insert Table 1 here]

Table 1 breaks down the percentages of competitive and noncompetitive races by type of districting plans in our dataset. For both the 1992 and 2002 elections, districts drawn by the courts and commissions are more competitive than those drawn by the legislature. For instance, 43.7 percent of the seats drawn by commissions in 1992 resulted in competitive elections overall, as compared to only 34.8 percent of the seats drawn by legislatures. While this provides some initial support to our hypotheses, there are many confounding factors that can affect the degree of competition in congressional elections. To control for these factors, we test our hypotheses using multivariate probit models, pooling our data across the 1992 and 2002 elections.

In our multivariate models, we test our hypotheses of the effect of the redistricting method on district-level competition by creating two dichotomous variables for method of redistricting. The variable, *commission* is coded one if a commission drew the plan, zero

otherwise. The variable, *court*, is similarly coded and leaves legislative drawn plan as the reference category.

Other factors are known to influence the competition in a district, and so we include a number of covariates to control for them. First, a *quality challenger* can increase the competition in House races (Jacobson 2004) so we control for it in our model.<sup>13</sup> We use previous victorious electoral experience as a proxy for candidate quality (Jacobson 1980). We also include a variable measuring whether an incumbent was not seeking re-election (*open seat*) since these races tend to be more competitive than those contested by an incumbent (Gaddie and Bullock 2000). Since *candidate spending* affects competitiveness (Jacobson 1980), we also control for this, operationalizing this variable as the natural log of the total amount of money spent by both the Republican and Democratic candidates.<sup>14</sup>

Competition is also affected by partisan make-up of a district (Jacobson 2004). To control for this, we subtract the Republican presidential candidate's vote margin in the entire nation from his margin in each district for the 1992 and 2000 presidential elections (adjusted for redistricting). Since this variable is computed on the basis of the two-party presidential vote, its inclusion in the model compares the strength of the Republican Party in a district with its average strength in the nation across both the 1992 and 2002 elections.<sup>15</sup> As a district becomes more heavily partisan, we would expect the election in that district to become less competitive. We also include a *south* dummy variable to control for any regional differences in the level of competition that stem from the need for preclearance under the Voting Rights Act of 1965 (Hill 1985). Finally, we include a dummy variable for the 2002 election to control for any year-to-year differences that might otherwise bias the results.

## Results

[Insert Table 2 Here]

Table 2 presents the estimates from our initial probit analysis of our model of influences on electoral competition in House races. First, we see that when courts are tapped to draw district boundaries, there are more competitive races on average. The same results hold for commission drawn plans as predicted. While the marginal effects on the increase in competitiveness is not overwhelming (0.049 and 0.041 respectively), many House races are often decided by a small margin, especially after redistricting occurs (Cox and Katz 2002; Jacobson 2004). Further, even if a few races went Democratic instead of Republican, the majority status in the House would change. Finally, the marginal effects for these extra-legislative plans are not statistically different from the effect for quality challenger, a factor known to alter congressional election outcomes (Jacobson 2004). Thus, this result suggests that these variables are *both* statistically and substantively significant and may even play a role in explaining the number of incumbent defeats that are often observed in election years subsequent to a redistricting cycle (see Jacobson 2004). Assuming one of the goals of court and commission-drawn plans is to produce more competitive House races, then it would appear as though this objective is being met based on our findings. However, if a party is interested in preserving the status quo, then it is best to maintain direct control over the redistricting process to better promote incumbency protection.<sup>16</sup>

For the additional covariates included in the model, we see that the presence of a quality challenger and spending both increase the degree of competition in House elections. As others have suggested, spending appears to exert the largest effect on competition of any of the variables included in the model. Also, as a district becomes more partisan in favor of one party,

it becomes less competitive. In contrast, factors such as, whether or not the race was held in the south, and open seat do not exert a statistically significant impact on competition in House races. Additionally, the negative coefficient on the 2002 fixed effects variable indicates a decline in competitive House elections from 1992 to 2002.

### **Conclusion**

We have examined the effects of three types of redistricting methods—legislative, commission-, and court-drawn plans—on the degree of competition in congressional races. By considering the opportunities, objectives and constraints of the different actors involved in these processes, we hypothesized that they would produce districts with different levels of competition. As hypothesized, we found that court- and commission-drawn plans yielded more competitive districts than legislative drawn plans. This suggests that by taking self-interest out of this important process, other values, such as competitiveness, may be enhanced.

Our findings have notable implications for democratic accountability. In an era when most elections are viewed as non-competitive our results suggest that partisan competition can be increased by removing the redistricting process from the hands of the legislators. While Butler and Cain (1992) and Hirsch (2003) have suggested that it is possible to increase competition through the redistricting process, we provide systematic evidence that this, indeed, is the case.

More questions in this area remain to be explored in future work. For instance, we focus exclusively on competition at the congressional level. But the self-interest motivation between state legislators and congressional seats is somewhat indirect. A test of the impact of redistricting on state legislative district's competition would offer additional support for our hypotheses. Furthermore, studying changes in competitiveness before and after redistricting

would also improve the tests of our hypotheses. In an era of polarized politics, future work will also provide an opportunity to more systematically examine the relationship between redistricting and increased polarization in the United States Congress.

**Appendix A: Assessing Redistricting Methods in the States**

**Table A – State Using Commissions and Courts to Draw Congressional Districts\***

Commissions		Courts	
State	Year	State	Year
Arizona	2002	Alabama	1992
California	1992	Arizona	1992
Connecticut	2002	Colorado	2002
Florida	1992	Illinois	1992
Hawaii	1992, 2002	Michigan	1992
Idaho	2002	Minnesota	1992
Indiana	1992, 2002	Mississippi	2002
Iowa	1992, 2002	New Mexico	2002
Maryland	2002	New York	1992
Minnesota	2002	Pennsylvania	1992
New Jersey	1992, 2002	South Carolina	1992, 2002
Oregon	1992	Texas	2002
Rhode Island	2002	Wisconsin	2002
Washington	1992, 2002		

\*Note – This represents our interpretation of the description of plans as described by Congressional Quarterly’s *Congressional Districts in the 1990s, and 2000s*. At times, it was difficult to discern who was actually responsible for drawing the districts. For instances, judges often will appoint commissioners to create districting plans for the court to approve. Thus, while the courts may be statutorily or constitutionally responsible for redistricting, it may delegate this authority to a commission. For example, in 1992, the California plan was thrown into the courts. However, since the judges appointed a panel of retired judges to draw the plan we coded it as a commission. Since both types of non-partisan plans show an increase in competitiveness, we do not feel that our coding scheme is driving our results.

## Appendix B: Controlling for Endogeneity

In modeling electoral competition, endogeneity poses a number of potential problems. For example, the choices of prospective candidates whether to run in a particular race are strategic (Jacobson and Kernell 1981; Cox and Katz 2002; Carson 2003), and so the perceptions of potential competition may influence challenger quality. Candidate spending may also be affected by the competitiveness of a seat, since if politicians and contributors act strategically, competitive districts will attract campaign contributions, all else being equal (Jacobson 1985; Green and Krasno 1988).

Endogeneity can bias regression coefficient estimates and threaten the validity of statistical inferences. We correct for potential endogeneity of candidate spending (a continuous variable) with a two-stage conditional maximum likelihood (2SCML) technique and of candidate quality (a dichotomous variable) with two-stage probit least squares (2SPLS).

With 2SCML, we obtain residuals from an exogenous regression of candidate spending (where a lagged value of candidate spending is employed as our instrument (Gerber 1998)). The exogenous spending model was  $spending_t = \beta_0 + \beta_1 spending_{t-1}$ . Lagged spending was statistically significant ( $t = 2.14$ ) in this model, but it was not a statistically significant predictor of competitiveness ( $z = -1.21$ ).

With 2SPLS, we obtained fitted values of the candidate quality variable from another exogenous probit on the quality challenger variable. These residuals were then included in the full probit model (see Table 2) along with the spending variable. These fitted values were then substituted for the candidate quality variable back into the original probit model. We used the average number of state house and senate representatives per congressional district as the exogenous predictor of *quality challenger* ( $quality\ challenger = \beta_0 + \beta_1 meanreps$ ), since state

legislatures are a prime pool of quality challengers to contest congressional seats (Jacobson 2004). Again, the probit coefficient was statistically significant ( $z = 2.41$ ), but it did not predict the presence of a competitive race ( $z = 1.38$ ).<sup>17</sup>

[Insert Table 3 Here]

After the residuals from the lagged spending model and fitted challenger quality values were included and substituted respectively in our model of electoral competition, the estimates of the impact of the different redistricts do not change much. The court and commission variables are still positive and statistically significant at the same levels of significance as before. For this reason, we elected to continue to interpret our original results reported in Table 2.

## Endnotes

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<sup>1</sup>See Hirsch (2003) for a discussion of the results of the 2000 redistricting process. Also, see Congressional Quarterly's *Congressional Districts in the 2000s* and *Congressional Districts in the 1990s* for a description of each state's type of redistricting plan. We used these books to categorize and describe the types of redistricting plans throughout the text.

<sup>2</sup> See Butler and Cain 1992 and Kubin 1996-97 for related analyses that have examined the effects of various types of redistricting plans.

<sup>3</sup> See Burnham 1974, Ferejohn 1977, and Cox and Katz 2002 for a critique of Tufte 1973.

<sup>4</sup> See Gerber 1996 for a more extensive discussion of the effects of institutional arrangements on policy outcomes in state legislatures.

<sup>5</sup> This holds for all states except Nebraska, which has a unicameral legislature.

<sup>6</sup> When a state gains House seats through reapportionment, a third goal—that of winning these new seats—exists (Lyons 2003).

<sup>7</sup> We expect to find no change in the underlying degree of competitiveness with partisan drawn plans since certain districts are becoming considerably safer while others are becoming more competitive. This “dual nature” of the redistricting process makes it difficult to sort out the underlying changes in overall competitiveness, which leads to our expectation of null results.

<sup>8</sup>In Appendix A, we list the states that used redistricting commissions or courts to create new congressional districts in 1992 and 2002. We also briefly describe our coding criteria.

<sup>9</sup>See the National Council of State legislatures web cite for a list of commission selection requirements (<http://www.senate.leg.state.mn.us/departments/scr/redist/red2000/apfcomco.htm>)

<sup>10</sup> From Article IV, Section 6 of the Hawaii constitution.

<sup>11</sup> See a recent editorial by Earl Blumenauer and Jim Leach advocating the use of redistricting commissions to increase competition in congressional elections Earl Blumenauer and Jim Leach, “Redistricting, a Bipartisan Sport,” *New York Times*, 8 July 2003, sec. A.

<sup>12</sup> We use this dichotomous dependent variable to be consistent with the extant literature. In an alternative specification of the model, we used the incumbent's two-party votes share as the dependent variable, and our substantive conclusions were largely consistent with what we report here.

<sup>13</sup> Given the potential for endogeneity bias in our model from including challenger quality and candidate spending on the right-hand side of the equation (Basinger and Ensley 2003), we used alternative estimation techniques to test the robustness of our model. We address this issue in Appendix B.

<sup>14</sup> We employ the convention (Jacobson 1980) of assuming a minimum of \$5000 spent by each candidate.

<sup>15</sup> See Ansolabehere, Snyder, and Stewart 2000, 2001 and Jacobson 2004 for a discussion of using district presidential vote as a more direct measure of the partisan predisposition of a congressional district than the popularity of the incumbent representing the district.

<sup>16</sup> Rather than use two dichotomous variable for *all* states that use commission or court drawn plans, we ran an additional analysis with a fixed effect for *each* state plan, commission and court. In general, most states employing these types of plans were more competitive, relative to legislative drawn plans. However, a small proportion actually showed a decrease or no change in competition. These results, along with a replication dataset are available at [www.msu.edu/~pipc](http://www.msu.edu/~pipc).

<sup>17</sup> There is a trade-off between these two techniques in terms of bias in the coefficients and in the standard errors. The 2SPLS technique produces accurate coefficients but the standard errors may be biased, while 2SCML returns accurate standard errors at the risk of biasing the coefficients (Alvarez and Glasgow 2000). Since the endogenous variables are only control variables in our model, we prefer accurate standard errors to unbiased coefficients. However, 2SCML cannot be used with a discrete endogenous variable since it requires the use of residuals, something not obtainable from discrete choice models. For a detailed discussion of both of these techniques, see Alvarez and Glasgow (2000).

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**Table 1. Proportion of Competitive United States House Seats by Type of Districting Plan, 1992 and 2002\***

<b>Type of Districting Plan</b>	<b>Competitive Seats in 1992</b>		<b>Competitive Seats in 2002</b>	
	<u>Percent</u>	<u>Total Districts</u>	<u>Percent</u>	<u>Total Districts</u>
Legislative	33.5%	194	16.3%	295
Court	36.5	115	23.3	60
Commission	43.7	119	31.0	71

\*Note – A race is deemed competitive if the winning candidate received less than 60 percent of the two-party vote in the election subsequent to redistricting. The total number of districts is less than 435 due to single districts states and Maine’s lack of a redistricting plan for the 2002 elections.

**Table 2. Probit Estimates for Competition in United States House Elections, 1992 and 2002**

<b>Variable</b>	<b>Coefficient (Standard Error)</b>	<b>p-Values<sup>a</sup></b>	<b>df/dx.<sup>b</sup></b>
Court	.367 (.151)	.008	0.049
Commission	.317 (.141)	.013	0.041
Quality challenger	.382 (.142)	.004	0.049
District partisanship	-.011 (.006)	.038	-0.0012
Candidate spending	1.284 (.105)	.000	0.143
Open seat	.263 (.166)	.057	0.034
South	.044 (.139)	.375	0.005
2002	-1.112 (.145)	.000	-0.133
Constant	-17.814 (1.424)	.000	---
N	854		
Log-Likelihood	-314.4		
PRE	.47		
$\chi^2$	391.21	0.000	
% correctly predicted	84.89		

<sup>a</sup>One-tailed

<sup>b</sup>Calculated using the `dprobit` command in Stata 8. This measures the change in the probability for an infinitesimal change in each independent, continuous variable and the discrete change in the probability for dichotomous variables.

Note – Estimating the probability of a competitive congressional election where a race is deemed competitive if the winning candidate received less than 60 percent of the two-party vote in the election subsequent to redistricting.

**Table 3. Probit Estimates for Competition in United States House Elections, 1992 and 2002  
- Controlling for Endogeneity**

Variable	Coefficient (Standard Error)	p-Values <sup>a</sup>	df/dx <sup>b</sup>
Court	.353 (.151)	.010	.044
Commission	.316 (.143)	.014	.038
Quality challenger fitted values	-.108 (.430)	.401	---
District partisanship	-.011 (.006)	.041	-.001
Candidate spending	.789 (.482)	.051	.083
Candidate spending residuals	.562 (.472)	.117	---
Open Seat	.507 (.141)	.000	.070
South	.0001 (.140)	.499	.00001
2002	-1.162 (.145)	.000	-.132
Constant	-11.423 (6.263)	.034	---
N	854		
Log-Likelihood	-317.15		
PRE	.43		
$\chi^2$	385.71	0.000	
% correctly predicted	83.84		

<sup>a</sup>One-tailed

<sup>b</sup>Calculated using the `dprobit` command in Stata 8. This measures the change in the probability for an infinitesimal change in each independent, continuous variable and the discrete change in the probability for dichotomous variables.

Note – Estimating the probability of a competitive congressional election where a race is deemed competitive if the winning candidate received less than 60 percent of the two-party vote in the election subsequent to redistricting.