

# Are Incumbents Really Advantaged?

## The Preference for Non-Incumbents in Indian National Elections<sup>\*</sup>

**Leigh L. Linden<sup>†</sup>**

January 8, 2004

(Job Market Paper)

### **Abstract:**

Using a non-parametric regression discontinuity design that compares candidates who barely win an election to those who barely lose, this paper estimates the effect of incumbency on a candidate's electoral prospects in India. Starting in 1991, I estimate that, rather than being at an advantage, incumbents are actually fourteen percent *less* likely to win an election than similar non-incumbents. This is a large disadvantage. To over-come it, an incumbent would have had to have won by an additional five and a half percent of the popular vote, a change equivalent to an incumbent moving from the first to the thirty-fifth percentile of elected officials ranked by margin of victory. This disadvantage contrasts with the advantage that incumbents enjoy in other countries as well as the advantage that Indian incumbents enjoyed prior to 1991. The disadvantage is also general with almost all incumbents faring equally poorly regardless of experience and party affiliation. While the available data prevent a formal test, the dominance of a single political party (the Indian National Congress) before 1991 may have provided a framework in which experience was valuable because incumbents who gained experience under the Congress system would interact with the same system when reelected. Starting in 1991, however, no party could be counted on to control parliament, making experience under the previous regime potentially less valuable.

---

<sup>\*</sup> Preliminary and incomplete.

<sup>†</sup> Doctoral Candidate, Department of Economics, MIT. E-mail: linden@mit.edu. I thank Abhijit Banerjee, Esther Duflo, and Sendhil Mullainathan for their assistance and support throughout this project. I also thank Daron Acemoglu, Joshua Angrist, David Autor, Kanchan Chandra, Victor Chernozhukov, Shawn Cole, Richar Eckaus, Michael Greenstone, Dean Karlan, Stuti Khemani, Rohini Pande, Michael Piore, James Snyder, the staff at the Election Commission of India, and various participants for helpful suggestions and comments. I am grateful to the U.S. Department of Education, the MacArthur Foundation, and the MIT Schultz Fund for financial support. All views expressed herein are, of course, solely my own.

## **Section I: Introduction**

A growing body of literature emphasizes the importance of political institutions in the process of economic development. While the exact nature of economically viable institutions remain unidentified, it is clear that the distribution of political power can determine the distribution of resources, even in a democracy (Acemoglu, 2002). In India, for example, villages where leadership positions are randomly reserved for female candidates are more likely to invest in infrastructure that meets the needs of women (Chattopadhyay and Dulfo, 2003a). Similarly, India reserves a large number of state and national parliament positions for historically disadvantaged groups known as scheduled castes and tribes. When candidates from these groups are elected, they use their influence to redirect resources to their constituents (Pande, 2003). The fact that political power makes such a difference is the reason that democratic governments are founded on the principle that voters should ultimately decide which representatives are chosen to wield power.

The major risk in a democracy is that elected officials will become entrenched or that running for office may simply prove too expensive. By the nature of the democratic system, incumbents are given access to resources and decision processes that non-incumbent challengers do not have. If elected officials are able to use their political influence to remain in power, voters will have no way to influence their policy decisions. Once entrenched, politicians are free to take distortionary actions such as simple graft or the evisceration of property rights. Stronger incumbents also raise the cost of entering politics because challengers must have sufficient resources to overcome the advantage of incumbency. These costs may then skew the allocation of political power even further towards the wealthy and effectively disenfranchise the poor, who may not have the resources to support candidates to represent their views.

Though mostly about the United States, a large literature has investigated the degree to which holding office affects a candidate's electoral prospects. These efforts have yielded two sets of empirical facts. First, incumbents enjoy significant advantages compared to their non-incumbent competitors. In terms of the raw probability of re-election, incumbents in national congressional elections are fifty percent more likely than similar non-incumbent peers to be re-elected (Lee, 2001). Second, the margin of victory of incumbents has increased significantly over time (Alford and Hibbing, 1989; Collie, 1981; Garand and Gross, 1984). The notable exception is Miguel and Zaidi's (2003) investigation of national elections in Ghana in which they find no evidence to support an incumbency advantage.

In this paper, I study the effects of incumbency on candidates' prospects for election in the Indian national parliament over the last fifteen years. Like in most developing democracies, critics have claimed that entrenched politicians and social elites control the political process. Running for office is expensive, and corruption seems to be rampant. Belying these criticisms, however, is the vibrancy of the Indian political

system. Compared to elections in the US, a large percentage of eligible voters visit the polls, those voters have a dizzying array of candidates and political parties from which to choose, and an active and free press informs their vote (Besley and Burgess, 2002).

To estimate the effects of holding office on a candidate's probability of reelection, I use a non-parametric regression discontinuity design. First, I calculate the margin of victory for winning candidates as the winner's vote share less the vote share of the second place candidate. Similarly, for losing candidates, I calculated the margin of victory by subtracting the winner's vote share from the losing candidate's voter share. The election rules then guarantee that each candidate wins (and thus becomes an incumbent for the subsequent election) if the candidate gains a sufficient percentage of the vote that his or her margin of victory is greater than zero. Stated differently, assignment to incumbency status is discontinuous at zero: Candidates with a positive margin of victory win and those with a negative margin of victory lose. Because of the discontinuity, it is possible to infer the causal effect of incumbency status by comparing candidates that are just barely elected to those that just barely lose as long as all other candidate characteristics that could influence the probability of being elected vary, on average, continuously at zero (Lee, 2001; Miguel and Zaidi, 2003). Mathematically, I estimate the effect of incumbency by non-parametrically estimating the relationship between the probability of winning a given election and the margin of victory in the previous election while allowing for a discontinuity at zero. The size of the discontinuity is then the causal effect of being an incumbent prior to a given election.

The last fifteen years in India provide a particularly interesting environment for conducting such a comparison. First, the Congress party which dominated Indian politics since independence, lost its dominance in 1989. At the same time, the political system became much more competitive with large increases in both the number of nationally competitive parties and the number of candidates contesting in each constituency. Second, unlike in the U.S., constituencies in which candidates are barely elected make up over ninety percent of the constituencies in India. As a set, the marginal constituencies are more than large enough to change the balance of power in parliament, making an understanding of their dynamics important in their own right. They are, however, also very similar to constituencies in which candidates did not win by narrow margins suggesting that the marginal constituencies can shed light on the size of the incumbency effect in general.

The estimate from the regression discontinuity design yields a very surprising result – incumbents in India face an enormous disadvantage. Compared to similar non-incumbents, incumbents are fourteen percent less likely to be elected to office.<sup>1</sup> To make up this gap an incumbent would have to have won the previous election by an additional five and a half percent of the popular vote, a change equivalent to an incumbent moving from the

---

<sup>1</sup> To avoid confusion, I will not report differences as relative changes unless explicitly stated. As a result, all estimates of the difference will reflect the raw change in the probability of winning resulting from holding office prior to entering the election.

first to the thirty-fifth percentile of elected officials ranked by margin of victory. For comparison, I also estimate the effects of incumbency before 1991. While the interpretation of the results are not as clear, the data suggest that prior to the last fifteen years, incumbents enjoyed advantages of six to eleven percent.

While there is insufficient data to identify clearly the cause of the change, the shift in the effects of incumbency seem to be related to the Indian National Congress party losing its dominance of national elections. The largest drops in the effects of incumbency are concentrated in constituencies that have either an incumbent affiliated with Congress or elected a Congress candidates in at least half of the elections prior to 1991. Prior to 1991, experienced incumbents are also more likely to be reelected than inexperienced incumbents and experienced incumbents that belong to Congress are the most likely to be reelected. Starting in 1991, however, being an incumbent is almost equally disadvantageous for all candidates, with congress candidates slightly more disadvantaged. It is thus possible that the expectation of continued control of the parliament by a single party meant that experience working with the party in the past would be valuable in the party's subsequent parliamentary term. Incumbents were thus more valuable to voters than non-incumbents by virtue of their past experience working in a parliament controlled by the Congress party. After the fall of Congress in 1989, no party could be expected to hold power after a given election, limiting the value of having learned to work within the previous political regime and reducing the value of being an incumbent.

The remainder of this paper is organized as follows. The next section describes the empirical strategy and provides a simple structural model of the electoral process. Section III provides a brief description of the electoral process and history of Indian national parliamentary elections. Section IV describes the available data, and Section V discusses the importance of understanding the performance of incumbents in marginal elections in India. I present the empirical results in Section VI. Finally, I conclude in Section VII.

## **Section II: Empirical Estimation Strategy**

In this paper, I intend to estimate the degree to which being an incumbent before standing for election affects a candidate's probability of election. This requires the estimation of the difference in performance of a candidate in two states of the world: one in which the candidate is an incumbent and one in which the candidate is not an incumbent. Since I can not observe a candidate as both an incumbent and a non-incumbent in the same election, I instead resort to comparing the performance of candidates that are identical except for the fact that one holds office immediately prior to the election. The identification problem in this context is to develop a method that ensures that compared candidates differ only in their incumbency status.

Unlike researchers who focus on the effects of incumbency in the U.S., I focus on the impact of incumbency on the probability of winning rather than the subsequent vote share. There are several reasons for this

difference. First, the meaning of the vote share is not well defined in elections with varying numbers of candidates. Five percent of the popular vote, for example, may be meaningless in an election between two candidates, but might be a large margin in a first-past-the-post election with four candidates or more. Second, when considering models of incumbent behavior, only the probability of winning influences the candidates. Vote shares are important to the extent that they reflect these underlying probabilities, but it is the underlying probability of reelection that ultimately matters. It is possible, for example, for the margins of victory of two candidates to differ while their underlying probability of re-election remains the same (Jacobson, 1987) despite the fact that the two statistics are strongly correlated.

The first problem in estimating the incumbency effects is to identify a pool of eligible candidates. The candidates contesting the election of interest are an obvious choice, but since there is often little information available about them, it is difficult to control for other differences that may account for the differential performance of incumbents and non-incumbents. A common solution is to use the pool of candidates in the election immediately preceding the election of interest and to use the results of this first election as a means of controlling for differences between the candidates in the subsequent election. This methodology can then be refined by restricting the sample to specific types of elections or by supplementing with additional information.

### A. A Simple Model of Elections

The problems involved with this estimation strategy can be illustrated with a simple structural model. First, I will restrict attention to a single constituency with  $N$  voters. I will refer to the election of interest as election  $t$  and the preceding election as election  $t-1$ . For simplicity, I will assume that  $C$  candidates contest in election  $t-1$  and that the same candidates contest in election  $t$ .<sup>2</sup> I will assume that voters vote for the candidate that in expectation will generate the highest value return for them, and to allow for the possibility of strategic voting and other possible correlations of values across voters, I will not restrict the initial distribution of these values.

Let  $\overline{VS}_j^{t'}$  be the actual vote share of candidate  $j$  in election  $t'$ . If  $V_j^i$  is the initial valuation of candidate  $j$  by voter  $i$ , then  $\overline{VS}_j^{t-1}$  can be calculated according to the following equation:

$$\overline{VS}_j^{t-1} = \frac{1}{N} \sum_{i=1}^N 1(V_j^i \geq V_{(C)}^i) \quad (1)$$

---

<sup>2</sup> The primary disadvantage of identifying candidates through the prior election is that many of them will not contest the election of interest. This is not a problem if the probability of rerunning is unrelated to whether or not the candidate wins the first election, but this may not always hold true. This is not a problem over the last fifteen years in India as I will discuss in Section VI.

where  $V_{(C)}^i$  is the valuation of the highest valued candidate for voter  $i$ , and  $1(\cdot)$  is an indicator variable set to one if the given statement is true and zero if false. The vote share of candidate  $j$  is simply the fraction of voters that value voting for candidate  $j$  the most. The “true” vote share, however, will differ from the vote share observed in the election because random factors (i.e. the placement of polling booths, traffic problems, etc.) that randomly affect voters voting for a particular candidate. I will thus assume that the observed vote share received by candidate  $j$  in election  $t'$  is given by  $VS_j^{t'} = \overline{VS}_j^{t'} + \varepsilon_j^{t'}$  where  $\varepsilon_j^{t'}$  is a random variable with a zero mean.

To identify candidates, I will rank them by their observed vote share in election  $t-1$  with candidate  $C$  being the candidate with the largest actual vote share and candidate one having the lowest. In a first-past-the-post election, candidate  $C$  will win the election  $t-1$  and will be the incumbent entering election  $t$ . I then define the margin of victory for candidate  $j$ ,  $MV_j^{t-1}$ , as follows. For the winning candidate, let

$MV_C^{t-1} = VS_C^{t-1} - VS_{C-1}^{t-1}$ . For every other candidate,  $j < C$ , let  $MV_j^{t-1} = VS_j^{t-1} - VS_C^{t-1}$ . By definition, the margin of victory for the winning candidate is non-negative and the margin of victory for losing candidates is non-positive.

At election  $t$ , voters' valuations of the candidates will change and the change in valuation will change the underlying vote share. For expositional purposes, I will assume that the change in vote share

$CVS_j^t = \overline{VS}_j^t - \overline{VS}_j^{t-1}$  can be partitioned into an additively separable function given by the following equation:

$$CVS_j = CVS_j(e) + CVS(MV_j^{t-1})$$

where  $e$  is the change in experience of the incumbent elected in election  $t-1$ . The point of this partition is to highlight that there are two paths through which a candidate's underlying vote share can change. First, voter's valuation of the candidate can change as a result of the candidate holding office for a term. Second, however, the vote share could change for reasons not related to the candidate's experience, and these effects are likely to differ depending on the vote share in the previous election. If an incumbent wins by a large margin, for example, opposition parties may decide to reduce the amount of campaign money they spend to support their candidates. The probability of the incumbent winning election  $t$  is then given by

$$\Pr[MV_C^{t-1} + (\overline{VS}_j^{t-1} - \overline{VS}_{C-1}^{t-1}) + \Delta CVS_j^C(e) + \Delta CVS(MV_C^{t-1}, MV_j^{t-1}) > \Delta \varepsilon_j^C \forall j < C] \quad (2)$$

and the probability of any other candidate  $j < C$  winning the election is given by

$$\Pr[MV_j^{t-1} + (\overline{VS}_{j'}^{t-1} - \overline{VS}_C^{t-1}) + \Delta CVS_j^j(e) + \Delta CVS(MV_j^{t-1}, MV_{j'}^{t-1}) > \Delta \varepsilon_{j'}^j \forall j < C] \quad (3)$$

where  $\Delta CVS_{j^n}^j(e) = CVS_{j^n}(e) - CVS_{j^n}(e)$  and  $\Delta CVS(MV_j^{t-1}, MV_{j'}^{t-1}) = CVS(MV_j^{t-1}) - CVS(MV_{j'}^{t-1})$ .

These equations describe a candidate's probability of election by four terms:  $MV_j^{t-1}$  represents the relative strength of candidate  $j$ ,  $(\overline{VS}_{j'}^{t-1} - \overline{VS}_C^{t-1})$  gives the relative strength of other candidates,  $\Delta CVS_{j'}^j(e)$  is the change in voter share due to experience, and  $\Delta CVS(MV_j^{t-1}, MV_{j'}^{t-1})$  is the change in vote share due to factors other than experience. These equations also illustrate the challenge of comparing incumbents and non-incumbents to estimate the effects of incumbency. Within this framework, the effects of either being an incumbent or not being an incumbent are given by  $\Delta CVS_j^C(e)$  and  $\Delta CVS_j^j(e)$ . It is clear from these equations, however, that differences in the probability of reelection are driven both by the effects of incumbency and by pre-existing vote share differences and other factors that could change the vote share a candidate receives.

Most researchers seek to hold these effects constant by controlling for differences in observable characteristics or by taking advantage of natural experiments that limit the degree to which incumbents can differ from non-incumbents. Levitt and Wolfram (1997) for example, focus in part on districts in which an incumbent won an open seat in the first election and correct for attrition bias through a structural assumption regarding the functional form of the election process. Ansolabehere and Snyder (2002) perform a similar analysis but focus on districts in which the incumbent prior to the first election was forced from office due to term limits in order to control for the endogeneity of an incumbent's decision about when to contest an election. Because of the function form assumptions, however, these studies are limited in the degree to which they can control for a candidate's quality or the quality of a candidate's competitors. For example, if incumbents are at an advantage (disadvantage) in an election relative to non-incumbents, then parties may place more (less) resources or nominate better (worse) candidates in elections without incumbents, biasing estimates of the incumbency advantage upwards. Similarly, candidates themselves differ in their strength. If a candidate's probability of being elected can be estimated ex ante (perhaps because of matches between the candidate and the characteristics of the district or because of a party's historical strength in a geographic area) and opposition parties then field weaker candidates, candidates may be re-elected based upon their strength as a candidate rather than any effects associated with holding office prior to an election.

## B. Estimating the Effects of Being an Incumbent

As an alternative, I employ a regression discontinuity methodology. The general framework is provided by Hahn, Todd, and Van der Klaauw (2001), and the application to elections is suggested by Lee (2001)<sup>3</sup>. This approach is based upon the insight that while two candidates with the same margin must also have the same incumbency status, it is possible to compare candidates that have a different status as incumbents but have arbitrarily close margins of victory by comparing incumbents who are barely elected to non-incumbents that barely lose. In the context of the previous model, this amounts to comparing the probability of reelection as  $MV_j^{t-1}$  approaches zero. The critical assumption of this methodology is that all of the other characteristics of candidates that could affect their probability of reelection on average vary continuously as a function of the margin of victory at zero. This allows incumbents and non-incumbents to differ systematically, and requires only that on average those candidates that are barely elected are similar to those candidates that barely lose. The major limitation of this approach, however, is that it relies on marginal elections to estimate the incumbency effects and these elections may, of course, not be representative of all elections.

In the structural model, this would only require that  $CVS(MV_j^{t-1})$  is continuous at  $MV_j^{t-1} = 0$ . To illustrate the effect of this assumption, consider the limits of equations (2) and (3) as  $MV_j^{t-1}$  approaches zero for some candidate  $j$ . The fact that  $MV_j^{t-1}$  approaches zero for some candidate  $j < C$  implies that both  $MV_{C-1}^{t-1}$  and  $MV_C^{t-1}$  also approach zero.<sup>4</sup> At the limit, the vote shares of candidates  $j$ ,  $C-1$ , and  $C$  are all equal in election  $t-1$ . I will denote the limit of the vote shares as  $VS^{t-1}$ . Finally to further simplify the exposition, I will assume without loss of generality that  $C = 4$  and that  $MV_3^{t-1}$  converges to zero. In other words, I will assume that four candidates are contesting an election and consider the case where the voter shares of three candidates converge to a three-way tie.

---

<sup>3</sup> Miguel and Zaidi (2003) have recently performed a similar analysis in Ghana. While they focus on political patronage as well as the effects of incumbency, they find that on average incumbent and non-incumbents fair similarly.

<sup>4</sup> If  $MV_{C-1}^{t-1} \rightarrow 0$ , then  $MV_C^{t-1} \rightarrow 0$  since  $MV_{C-1}^{t-1} = -MV_C^{t-1}$ . So, if  $j = C-1$ , the result follows directly. If  $j < C-1$ ,  $MV_{C-1}^{t-1} \rightarrow 0$  follows from the fact that  $MV_{C-1}^{t-1} < 0$  and  $MV_j^{t-1} < MV_{C-1}^{t-1}$ .

The limit of (2) as the vote shares of the top three candidates converge is then given by the following value:

$$\Pr[\Delta CVS_3^4(e) > \Delta \varepsilon_3^4, \Delta CVS_2^4(e) > \Delta \varepsilon_2^4, (\overline{VS}_1^{t-1} - VS^{t-1}) + \Delta CVS_1^4(e) + \Delta CVS_1^4(0, MV_1^{t-1}) > \Delta \varepsilon_1^4] \quad (4)$$

Similarly, the value of (3) can be rewritten in the following form for  $j, j' = 2, 3, j \neq j'$ :

$$\Pr[\Delta CVS_4^j(e) > \Delta \varepsilon_4^j, \Delta CVS_{j'}^j(e) > \Delta \varepsilon_{j'}^j, (\overline{VS}_4^{t-1} - VS^{t-1}) + \Delta CVS_j^4(e) + \Delta CVS_j^4(0, MV_1^{t-1}) > \Delta \varepsilon_1^j] \quad (5)$$

The assumption that  $CVS(MV_j^{t-1})$  is continuous at zero then guarantees that as the vote shares converge

$\Delta CVS_1^4(0, MV_1^{t-1}) = \Delta CVS_j^4(0, MV_1^{t-1})$  where  $j = 2, 3$ . This leaves the changes due the additional

experience of the incumbent as the only differences between the probability of reelection for the incumbent

and the second and third ranked candidates. The other differences that biased the comparison converge to zero

with the margin of victory. Since the only difference between the candidates is that one of them is an

incumbent, this allows me to infer the causal effect of incumbency on the probability of winning election  $t$  for

candidates that barely win or lose an election. Relying on these marginal candidates, however, is the main

shortcoming of the methodology because the effects of incumbency on candidates that win or lose by larger

margins need not be the same. These marginal elections alone may be interesting, as they are in Indian

parliamentary elections, but extrapolating the estimates to non-marginal candidates and constituencies requires

the assumption that these marginal elections are not systematically different. In Section V, I demonstrate that

in the current context, marginal and non-marginal constituencies are in fact similar.

To estimate the effect of being an incumbent on the probability of winning an election, I estimate the

relationship between the probability of winning election  $t$  and the margin of victory in election  $t - 1$

separately for incumbents and non-incumbents and then estimate the size of the discontinuity that results for a

margin of victory of zero. Formally, I estimate the following relationship:

$$\text{Win}_{j,k}^t = f_1(MV_{j,k}^{t-1} | MV_{j,k}^{t-1} > 0) + f_2(MV_{j,k}^{t-1} | MV_{j,k}^{t-1} < 0) + \varepsilon_{j,k}^{t-1} \quad (6)$$

where  $\text{Win}_{j,k}^t$  is an indicator variable for whether or not candidate  $j$ , in constituency  $k$  won the election in

period  $t$ . The effect of being an incumbent is then measure by taking the following difference:

$$\lim_{MV \rightarrow 0^+} \hat{f}_1(MV | MV > 0) - \lim_{MV \rightarrow 0^-} \hat{f}_2(MV | MV < 0) \quad (7)$$

where  $\hat{f}_1$  and  $\hat{f}_2$  are estimates of  $f_1$  and  $f_2$  respectively.

### C. Incumbency Advantage or Disadvantage?

Empirically in the United States, incumbents do fare better than non-incumbents, and as a result, a number of explanations have been offered to explain such an advantage. These explanations range from models of

asymmetric information (Banks and Sundaram, 1993; Austen-Smith and Banks, 1989; Besley and Case, 1995; Rogoff, 1990) to the beneficial aspects of office entitlements such as franking privileges, the ability to shape redistricting plans, seniority privileges, and the potential for increased name recognition (Alford and Hibing; 1989). Nothing in these models, however, guarantees an advantage, and many of them could just as easily generate a disadvantage with minor changes in the underlying assumptions.

Returning to the structural model from above, recall that voter  $i$  has an initial valuation of candidate  $j$  that I am denoting  $V_j^i$ . The true vote share for candidate  $j$  is then the fraction of voters who receive the highest expected value by voting for candidate  $j$  and is given by equation (1). The general assumption behind the incumbency advantage is that after spending a term in office the expected value of the incumbent, candidate  $C$ , increases. Let  $V(e) = S(e)$  be the value of the incumbent due to experience so that the value of the incumbent for an arbitrary voter is given by  $V_C^i + V(e)$ . Let  $e$  be the number of terms the incumbent has held office. The basic assumption in the models that generate an incumbency advantage is that  $S'(e) > 0$  so that after spending a term in office voters expect that voting for the candidate is more valuable than they expected before election  $t - 1$ . This change in expectation could result from any of the explanations listed above. The incumbent may have more experience allowing her to work more effectively within the established political system, she may have gotten access to resources that allow her to improve or expand her public image, or by being in office voters may have learned more about her abilities.

The change in vote share of each candidate due to the increased experience is then given by the following equations:

$$CVS_C(e) = \frac{1}{N} \sum_{i=1}^N 1(V_C^i + V(e+1) \geq V_{(C)}^i \ \& \ V_C^i + V(e) < V_{(C)}^i) \quad (8)$$

$$CVS_j(e) = -\frac{1}{N} \sum_{i=1}^N 1(V_C^i + V(e+1) \geq V_{(C)}^i \ \& \ V_j^i = V_{(C)}^i), \ j < C \quad (9)$$

The incumbent gains votes on average from voters for whom the increase value of voting for the incumbent is enough that they gain more by voting for the incumbent than their previously highest ranked candidate ( $C$ ). Similarly, candidates that were previously the most valuable vote for those voters proportionally lose votes. The higher vote shares mean that on average the incumbent also receives a higher measured vote share compared with other candidates and the increased expected value translates into a higher probability of winning than non-incumbents. For marginal candidates where the probability of victory is given by (4) and (5), this change is the only difference between the candidates.

The assumption, however, that the expected value of a candidate increases after a period in office is questionable. While incumbents certainly develop experience working within the existing political system they may use that experience to pursue activities that are not in the best interests of voters like pet causes or project or even corruption. To account for these divergent effects, consider a different specification of voters' valuation of experience,  $\tilde{V}(e)=(1-G(e))\tilde{S}(e)$  where the increased service provided to voters is given by  $\tilde{S}(e)$  and the negative effect, which I will refer to as the graft effect, is given by  $G(e)$ . As before, I assume that candidates become more adept at serving voters as they gain experience ( $\tilde{S}'(e) > 0$ ). I also, however, assume that the graft effect becomes larger with experience ( $G'(e) > 0$ ) as candidates get more experienced influencing the civil system and develop the ability to pursue their own agenda. Simple differentiation yields the following relationship between a change in experience and the average expected value of voters:

$$\tilde{V}'(e) = (1 - G(e))\tilde{S}'(e) - G'(e)\tilde{S}(e) \quad (10)$$

If  $\tilde{V}'(e) > 0$ , then the valuation of the incumbent follows the process laid out in equations (8) and (9). If  $\tilde{V}'(e) < 0$ , the process runs in the opposite direction with voters that previously valued voting for the incumbent the most switching to other candidates, making incumbents less likely to win election  $t$ .

In what follows, incumbents switch from being at an advantage before the 1991 election and then fall to a disadvantage starting with the 1991 election. Equation (10) suggests that this can occur in two ways. First, the levels of provided service and graft could change even if the marginal ability to engage in the activities due to increased experience remains the same. Second, the relative marginal returns to experience could change. Specifically, either candidates might become relatively more effective at diverting resources to personal gain or they may become less effective at serving their constituents.

While the data is insufficient to identify the actual cause of the change, I will argue that the data seems consistent with a model in which Congress' dominance provided a relatively stable structure in which because Congress could always be expected to control parliament, voters could expect that experience in the previous term would prove valuable systemic experience in the subsequent term. With the end of Congress's dominance in 1989, control of parliament switched between parties making experience under the previous regime less valuable. This change in the political structure then resulted in a system in which as politicians gained more experience and influence they become more likely to pursue activities that are not in the best interest of voters.

### **Section III: Indian Political System and Lok Sabha Elections**

The current political institutions took shape shortly after India gained independence from Great Britain in 1947. The Indian form of government is very similar to both the US and British systems. Like the US, India has a federal system with thirty-two semi-autonomous states and union territories joined under a single central government. The legislature comprises two houses of parliament: an upper house (Rajya Sabha) and a lower house (Lok Sabha) which is the focus of this study. All members of the upper house are elected by state legislatures except for twelve members appointed by the president by virtue of their expertise in particular subjects like art, history, science, etc. Except for two seats, appointed by the president to represent the Anglo-Indian community (should he or she feel that the community is not adequately represented by the other elected members), all members of the lower house are directly elected by all citizens over the age of eighteen. A fraction of these seats can only be contested by members of historically disadvantaged groups designated as either scheduled castes or scheduled tribes.<sup>5</sup> The number of seats in both houses allotted to each state is proportional to the population of the state. There are currently 545 members of the Lok Sabha elected from 542 constituencies and 235 members of the Rajya Sabha. The president, elected by members of parliament and state officials, serves as the head of state while the Prime Minister, appointed by the president from the party or coalition enjoying majority support in the Lok Sabha, implements the directives of the legislature and oversees the day-to-day functioning of the government.

Constituencies for the lower house are drawn by an independent, legislatively created Delimitation Commission. The original intent was to redraw the boundaries after each decennial census to ensure that each constituency had roughly the same population. In practice, constituencies have been redefined twice since they were originally set for the 1951-1952 election: once in 1963 and again in 1973. Under a 1976 constitutional amendment, constituency boundaries were frozen until after the 2001 census to ensure that states' family planning efforts did not jeopardize their representation in the national legislature.

Elections are organized by a constitutionally empowered organization called the Election Commission of India. The commission is staffed by three members appointed by the president, and has the responsibility of overseeing the election of all state and national parliaments and elections to the offices of the president and vice-president. Shortly before the target date for an election, the Commission formally announces the upcoming elections at which time special rules governing the behavior of political parties and candidates come into effect. Candidates are then nominated within each constituency, at least two weeks are provided for campaigning, and finally the polling begins. Results for a given constituency are usually announced a day after polling. All races are first-past-the-post with the candidate receiving the largest percentage of eligible

---

<sup>5</sup> The goal of this policy is to counter caste based discrimination and the historically disadvantaged socio-economic positions of these groups.

votes winning regardless of the proportion of votes received. National elections are an enormous undertaking. Due the size of the country, national elections occur over at least three days. There are currently over 600 million eligible voters that vote in 800,000 polling stations. In 1996 general election, the commission employed almost 4 million people, counted over 2.5 million ballot boxes, and spent the equivalent of over \$US 100 million (ECI, 2003).

In practice, national parliamentary elections were dominated by the Congress party who, except for a brief three year period starting in 1977,<sup>6</sup> held power by wide margins until the 1989 election. Before the 1989 election, a large scandal broke, in which officials received kickbacks for the purchase of military hardware. The new scandal reopened an old wound. Congress had always been beset by corruption charges, and Sanjay Gandhi, the older brother of the Prime Minister Rajiv Gandhi, had been notorious for profiting at the public's expense. Possibly due to these revelations, Congress lost in 1989 for the first time to an un-united opposition, signaling the potential for a multi-party democracy in India. To make matters worse, charges of vote rigging emerged in Rajiv Gandhi's district of Amethi. As one Indian scholar notes, "The November 1989 General Elections in India put an end to what was widely accepted as the unavoidable and permanent monopoly of power by a single party in power which ruled the country for 42 years, except for a brief interlude, when the Janata Government was at the Centre (Ahuja, 1992)." Since 1989, no party, including congress, has ever again won an outright majority in a national election.<sup>7</sup>

After the 1989 elections, a number of political trends emerged. First, the Congress party, while still powerful, generally fared as well as other major parties over the period in stark contrast to its previous success (Figure 1). Second, the political environment became much more competitive. As Figure 2 shows, the average number of candidates in each district increased to the point where the Election Commission felt it necessary to increase the deposits and nomination requirements in 1996.<sup>8</sup> The number of nationally competitive political parties also increased significantly (Figure 3) as previously state and local parties vied for a larger role in national politics. Starting in 1989 control of parliament began to shift between parties and coalitions and no one coalition or party could expect to win. Finally, while always significant in India, communal conflicts became increasingly prominent in national politics. Hindu-Muslim conflicts have sparked many large scale riots over a mosque that

---

<sup>6</sup> In 1975, the Prime Minister Indira Gandhi imposed martial law and initiated a period known as the Emergency. During the next twenty-one months, the government initiated a policy of clearing slum areas, relocating their inhabitants, and forcing many poor individuals to undergo sterilization procedures. Partly as a result of alienating the poor, a core constituency, and also a result of the opposition parties merging to form a single united party, Congress lost the first post-Emergency election in 1977. While there is considerable debate about the sources of Congress support in the next two elections, Congress won both of them by very wide margins. Until the 1989 elections, the loss in 1977 was seen by many as a possible anomaly.

<sup>7</sup> Though in the Tenth Lok Sabha they would build an outright majority for the last time through bye-elections and other members joining the Congress party.

<sup>8</sup> I am currently investigating the role that increase political competition played in the change in the effects of incumbency status.

is reputed to have been built centuries ago by a Moghal invader on the ruins of Hindu temple in Ayodhya and propelled a number of religiously oriented parties onto the national political scene. The once ardently (and now somewhat moderated) Hindu nationalist party, the Bharatiya Janata Party (BJP) has even managed to form a coalition government after the national elections in 1998 and 1999.

#### **Section IV: Description of the Data**

In addition to holding all elections in India, the Election Commission of India also releases comprehensive reports on the outcome of every state and national election. From the ECI, I was able to obtain the results for all thirteen national parliamentary elections (1951, 1957, 1962, 1967, 1971, 1977, 1980, 1984, 1989, 1991, 1996, 1998, and 1999). For each candidate in each constituency, the ECI releases the individual's party, the number of votes the candidate receives, and the candidate's gender. For each constituency, the ECI also releases the number of candidates that were nominated, rejected, and who eventually contested along with the number that officially withdrew and the number that forfeited their deposit. They also report the number of polls, number of eligible voters, the number of actual votes, and the number of votes rejected.

While comprehensive, these data do have a number of shortcomings. Most unfortunate is the fact that the ECI does not consistently record the names of candidates. Variation occurs along four primary dimensions. First, for a given name, the spelling can vary. Some of the discrepancies are clearly the result of the ambiguity resulting from the transliteration of names into English. However, there are also a number of spelling variations that are just mistakes. Second, there is variation in which names are reported. In some elections, the ECI may list two names and in another three or four. Third, names that are reported separately in one election can be combined into an individual name in another. Finally, descriptors like the name of a candidate's relation, the candidate's profession, and honorifics are also inconsistently recorded.

The methodology that I employ requires me to track each candidate's political career through each election, and the fact that names are inconsistently recorded complicates this. My solution is a simple algorithm that allows me to mechanically match candidates over time within a given constituency. I developed this algorithm by manually matching the names of candidates in five constituencies, generalizing the characteristics of the differences in the way that names were recorded, and applying this methodology to all candidates. Specifically, I first match all names as given in the data across all thirteen elections. I then iteratively relax the definition of a match by allowing for, in order, omitted or mis-ordered names, in-accurate divisions between names, and finally spelling differences of a character or less. Because there are over 40,000 names in the data set, the potential for mis-matched names is large. To control for this, I match only within a given constituency over time which is possible because the definitions of the constituencies were frozen by parliamentary mandate after

the Emergency.<sup>9</sup> I can thus use the results from any constituency for which I have regularly reported data for each election from 1977 to 1999.

In addition to the name issues, however, there are a few inconsistencies in the timing of elections as well as the reporting of results from some constituencies. First, the ECI has not consistently reported the occurrence or outcomes of bye elections.<sup>10</sup> As a result, I am forced to ignore these elections. Second, even regular elections in some areas have not been consistently held or reported. Elections in the states of Jammu and Kashmir, Punjab, and Assam have at one time either been canceled or delayed because of communal unrest. Additionally, the following districts do not report results for each year after the emergency: Purnea and Patna in the state of Bihar, Mizoram in the state of Mizoram, Meerut in Uttar Pradesh, Shillong in Meghalaya, and Daman and Diu in the state of Daman and Diu. Eliminating the districts with inconsistent reports for regular elections then leaves me with a data set reflecting 504 of the 543 constituencies in India.

## **Section V: Representativeness of Marginal Elections**

As mentioned in Section II, the major limitation of the regression discontinuity approach is that it relies on candidates that barely win or lose elections to estimate the incumbency effects for candidates in general. Results from these marginal elections are potentially valuable for two reasons. First, if marginal constituencies are common enough to determine the control of parliament, then understanding the effects of incumbency in these constituencies is important in its own right. Second, however, if marginal constituencies do not differ significantly from non-marginal constituencies, then it is reasonable to assume that the measured incumbency effects are applicable to all constituencies.

In this study, both of these justifications support the importance of the regression discontinuity results. In India, constituencies in which the decision is marginal could easily determine which party or coalition controls the parliament. Starting in 1991, over half of the constituencies in an average election have a margin of victory of less than ten percent. A party's ability to win these constituencies alone would be enough to control the Lok Sabha. Through 1989, the outcomes of twenty-nine percent of constituencies were determined by a margin of less than ten percent. While smaller this is still a significant percentage of constituencies and could make any party a formidable presence in the parliament.

Additionally, however, marginal constituencies are very similar to non-marginal constituencies. Table 1 shows the descriptive characteristics of marginal and non-marginal constituencies. The first two columns

---

<sup>9</sup> It is, of course, possible that candidates will change constituencies over time, and I check for bias resulting from the effect below.

<sup>10</sup> These are elections held to fill a position vacated prior the subsequent national election.

display the average characteristics for the period starting in 1991. On average these constituencies are very similar, and do not support the contention that marginal and non-marginal constituencies differ systematically. This should not be surprising, however, since over ninety percent of constituencies at some point experience an election where the margin of victory is less than ten percent. The third and fourth columns of Table 1 list the differences for the period immediately after the Emergency.<sup>11</sup> The results are generally the same. The lack of any systematic difference between marginal and non-marginal constituencies suggests that the results for marginal constituencies are likely to reflect the effects of incumbency in general.

## **Section VI: Estimation of Incumbency Effects**

### **A. Estimation Method**

Figure 4 graphically presents the central result of this paper – a graph of the relationship between the probability of re-election and the margin of victory in the previous election (described by equation (6)).<sup>12</sup> The figure depicts a local polynomial estimation of the probability of winning a given election (y-axis) as a function of the margin of victory in the previous election (x-axis). The black dots represent the average probability of election for all candidates that fall within a two and a half percent interval centered at the point on the x-axis at which the dot is located. The size of each dot is directly proportional to the number of observations that fall in the respective interval. Generally, as one would expect, the estimated function fits the average probabilities of winning quite well, and the probability of winning increases in the margin of victory – except for candidates with a zero margin of victory. At zero, the right and left hand limits are visibly different suggesting that incumbents are about fourteen percent less likely to win than their non-incumbent competitors.

Figure 5 depicts the relationship using the entire support, highlighting the importance of the regression discontinuity design. A simple comparison of the reelection rates of all candidates, listed in Table 2, suggests that incumbents are at a thirty-seven percent advantage compared to non-incumbents. As explained previously, however, this sample includes both very strong incumbents that derive their power from sources other than their office and conversely, very poor candidates who lose by very large margins and have little chance of building a vote base. The first three columns in Table 3 illustrate the differences between these candidates. On average, incumbents are more likely to be female, have substantially more political experience, and are more likely to belong to one of the major parties. In addition to the difference in incumbency status, the difference in the reelection rates thus likely reflects other differences between the candidates.

---

<sup>11</sup> In comparison to the period starting in 1991, candidates before 1991 seem to have relatively less experience. This result, however, is probably an artifact of my inability to measure candidate's experience before the emergency. As a result, all candidates' experience is measured starting in 1977.

<sup>12</sup> Candidates that run in the first election but not the second are recorded as having lost the second election.

Restricting the comparison to only candidates that win or lose by less than a fifteen percent margin eliminates the poorest and strongest candidates, reducing the measured advantage to twenty-two percent. Reducing the sample further, however, to those winning or losing by less than two and a half percent, yields an incumbency disadvantage of five percent. If the continuity assumption holds, then these candidates will differ less along both observable and unobservable characteristics, making their relative performance more indicative of the effects of incumbency in general. The last three columns in Table 3 confirm this conjecture for characteristics observable in the data. The differences between incumbents and non-incumbents in this range are quite small. Compared to non-incumbents, incumbents, for example, are six tenths of a percent less likely to be female, have marginally more political experience, and are almost equally likely to belong to a major party.

While these comparisons of candidates that barely won and loss are suggestive, the comparison ignores both the slope of the data near the discontinuity and the information available in the rest of the data set. A more precise comparison can be made by estimating equation (6) and comparing the left and right hand limits directly. In most cases, the discontinuity can be estimated simply by specifying a parametric relationship between the variables of interest and including an indicator variable for whether or not a candidate was an incumbent. This approach, however, is problematic in the context of Indian parliamentary elections. As Figure 5 shows, a large number of candidates run for office, perform poorly, and have very little hope of winning the subsequent election. This mass of candidates, far from the discontinuity, exerts tremendous influence over the estimate of the left hand limit of the function at zero. As a result, the estimates are very sensitive to the order of the polynomial used in the specification, making it difficult to estimate the endpoints without additional information regarding the true functional form. The same is true for estimations using probit and logit models.

Given the uncertainty regarding the functional form, the natural solution to this problem is to use a semi-parametric estimate for the relationship which would allow more flexibility in the specification of the functional form. In regression discontinuity context, however, the discontinuity itself becomes a problem since smoothness is one of the underlying characteristics usually assumed by semi-parametric estimators. One way to resolve this problem is to estimate the semi-parametric relationship on either side of the discontinuity and take the difference of the conditional expectations at the discontinuity point itself. Unfortunately, many estimators are biased at the boundaries requiring the use of smaller bandwidths that slow the rate of convergence of the point estimates.

Following the work of Hahn, Tadd, and Van der Klaauw (2001) who suggest avoiding these biases by using local polynomial regression techniques developed by Fan (1992; Fan and Gijbels 1996) , Porter (2002) develops a general estimator that achieves the optimal rate of convergence in the non-parametric framework. Using the local polynomial regression estimator, I estimate the following function:

$$\text{Win}_{j,k}^t = f_1(MV_{j,k}^{t-1} | MV_{j,k}^{t-1} > 0) + f_2(MV_{j,k}^{t-1} | MV_{j,k}^{t-1} < 0) + \sigma(MV_{j,k}^{t-1})\varepsilon$$

where  $\varepsilon$  is assumed to be independent and distributed according to the standard normal distribution. Within this framework, the value of  $f_1$  or  $f_2$  at  $x$  is estimated by finding  $\beta_0$  where  $\beta_0$  and  $\beta_1$  minimize the following function at  $x$  :

$$\sum_{t,j,k} \{ \text{Win}_{j,k}^t - \beta_0 - \beta_1(MV_{j,k}^{t-1} - x) \}^2 K_h(MV_{j,k}^{t-1} - x)$$

where  $K_h(z) = 0.75(1-z^2)$  is the Epanechnikov Kernel.<sup>13</sup> I select a uniform bandwidth according to the following two-step process. First, I make a preliminary estimate of the bandwidth using a cross-validation estimator. Second, using this initial bandwidth estimate, I then estimate the mean integrated square error of the estimated function and choose the bandwidth that minimizes the estimate. I can then estimate the discontinuity of the function at zero by subtracting the left hand limit at zero of the estimate of  $f_2$  from the estimated right hand limit of  $f_1$  at zero as in equation (7).

The bandwidth estimate chosen by this selection algorithm then converges to zero fast enough as the sample size grows that the distribution of the estimated discontinuity converges to the following distribution:

$$\sqrt{nh}(\hat{\alpha} - \alpha) \xrightarrow{d} N\left(0, \frac{\sigma^{2+}(0) + \sigma^{2-}(0)}{g_0(0)} e_1' \Gamma^{-1} \Delta \Gamma^{-1} e_1\right)$$

where  $\alpha$  is the true size of the discontinuity,  $\hat{\alpha}$  is the estimated discontinuity,  $g_0(0)$  is the density of  $MV_{j,k}^{t-1}$  evaluated at zero, and  $\sigma^{2+}(0)$  and  $\sigma^{2-}(0)$  are the right and left hand limits of the variance

estimate.<sup>14</sup> The terms  $e_1$ ,  $\Gamma$ , and  $\Delta$  are defined as  $e_1 = (1, 0)'$ ,  $\Gamma = \begin{bmatrix} \gamma_0 & \gamma_1 \\ \gamma_1 & \gamma_2 \end{bmatrix}$ , and  $\Delta = \begin{bmatrix} \delta_0 & \delta_1 \\ \delta_1 & \delta_2 \end{bmatrix}$  where

$$\gamma_k = \int_0^{\infty} K_h(u) u^k du \quad \text{and} \quad \delta_k = \int_0^{\infty} K_h^2(u) u^k du .$$

<sup>13</sup> Unlike other kernel estimators, the Epanechnikov kernel is always the optimal choice for Local Polynomial Regression Estimator.

<sup>14</sup> I estimate the variance of the disturbance term at the right and left hand limits (i.e. allowing for heteroskedasticity conditioned on the margin of victory) using the density weighted process outlined in both Porter (2002) and Hardle (1990).

Compared with other estimation techniques, this process has two potential problems. First, as with most non-parametric estimators, my estimates are not unbiased, but any reduction in bias would come at the cost of an increase in the variance of the estimate. This is further complicated by the fact that the discontinuity in question occurs at an inflection point of the function. Since the function is concave to the left of zero and convex to the right, this bias should cause me to under-estimate slightly the size of the discontinuity. Second, when estimating the variance of the error terms, I control for nothing more than heteroskedasticity as a function of the margin of victory. This is problematic since a misspecification of the correlation of error across treated and untreated observations can bias the estimated standard deviation of the point estimates.

To gauge the magnitude of these potential problems, I also estimate the incumbency advantage using a spline estimator with knots at -45, -35, -25, -15, -5, 0, 5, 10, 15, 25, 35, and 45 and including both year and constituency fixed effects. All of the estimates are clustered at the state level to avoid making strong assumptions about the form of variance/covariance matrix of the error terms and to allow for the possible non-independence of error terms. Since the spline estimator is more efficient and generates results consistent with the local polynomial regression, I use the spline estimator to estimate the ancillary results which are often based upon subsets of the data. Finally, for reference, I include two additional estimates: a simple linear fit of the data that lie within a ten percent interval around zero and a quadratic polynomial fit using all of the data. The linear fit summarizes the data directly adjacent to the point of discontinuity, but is inefficient because it ignores the remaining data.

## **B. Incumbency Effects: 1991 - Present**

The first six rows in Table 4 exhibit the results of these estimations, which confirm the graphical depiction of the discontinuity in Figure 4. These results are not conditioned on a candidate contesting the current election and candidates that fail to contest are assumed to have lost. The first column is the right hand limit of the function in Figure 4 or the probability of a candidate that was barely elected in the first period winning in the subsequent period. The second column contains the probability of victory for candidates that barely lost the first election. Finally, the third column is the difference between these values. As usual, the standard deviation of each of the point estimates is in parenthesis below the estimate. The bias in the non-parametric estimates due to the inflection point does not seem to be a problem since all of the estimates are similar. On average, being an incumbent makes a candidate about fourteen percent less likely than a non-incumbent to win an election. The difference is also statistically significant under each treatment of the error terms, though the clustered standard errors are much larger than those of the non-parametric estimate (5.98 versus 1.92).

As explained in Section II, the ability to interpret this difference as a causal relationship depends critically on the assumption that all other characteristics that affect a candidate's probability of being reelected vary

continuously as a function of the previous margin of victory at zero (i.e. that  $CVS(MV_j^{t-1})$  is continuous at  $MV_j^{t-1} = 0$ ). While it is impossible to completely verify the validity of this assumption, I can verify it for candidate characteristics observable in my data set. The seventh through eleventh rows of Table 4 show this comparison using the spline estimator for four characteristics: membership in the Congress party, number of previous electoral victories since 1977, number of years experience as a member of the Lok Sabha since 1977, and number of elections contested since 1977. All of the estimated differences are statistically and practically insignificant, suggesting that, at least at the margin, the candidates are comparable.

The remaining rows of Table 4 decompose the source of the incumbency effect into the probability of running in the second election and the probability of winning conditional on running. Row twelve shows the estimated probability of running in the subsequent election for marginal incumbents and non-incumbents. In previous studies that find advantages to incumbency status, incumbents are much more likely than non-incumbents to run for reelection. This can bias the estimates of the incumbency effects if a systematic relationship exists between a candidate's probability of running again and the candidate's probability of reelection. As row twelve illustrates, over the period in question, incumbents and non-incumbents are equally likely to run for reelection. This relationship is depicted in Figure 6 using the spline estimate of the function. As one would expect the probability of contesting in the subsequent election increases with one's margin of victory, but there is almost no difference in the probabilities of those candidates just barely elected or not elected.

This allows for a straightforward interpretation of row thirteen, which reports the probability of victory conditional on a candidate contesting the current election. Assuming that a candidate runs a second time, not holding office increases one's chances of reelection by almost twenty-eight percent. Both this and the unconditional estimate are enormous effects. In practice, it would take significant effort to make up such a disadvantage. On average, for example, an incumbent would have to win by an additional five and a half percent of the popular vote, a change equivalent to an incumbent moving from the first to the thirty-fifth percentile of elected officials ranked by margin of victory.

### **C. Robustness**

Because I do not know with certainty which names correspond to the same candidate, I had to use the name matching algorithm explained in Section IV. This algorithm, however, can create biases in two different ways. First, if the equivalence relationships are too general, then matches between names will occur randomly. This effect will attenuate any measurable differences between incumbents and non-incumbents because both are treated in the same increasingly random fashion. To check for this, I estimated the effects of incumbency

using the spline estimator for three different sets of equivalence relationships. The results of which are displayed in the first three rows of Table 5.

In the first row, I consider two names to match if and only if the exact string provided by the Election commission matches. In the second row, I also identify individual names within the given string, allow for the possibility that all names are not reported in each period, and also allow for the possibility that the names were mis-ordered (i.e. by being listed last name then first with the comma omitted). The third row presents the equivalence relationships used for the estimates in Table 4, and is the same as the relationships for row two with the exception that I allow the names to differ by one character. The results suggest that the relationships are in fact not too general since the estimated difference is the same for each set of equivalence relationships. Generalizing the equivalence relationships from full string matching to the matching of individual names increases the estimated probability that incumbents or non-incumbents will be elected, but it does not affect estimated differences in these probabilities. Allowing the single character deviation has almost no effect either on the estimation of the levels or the difference.

Another problem arises from the possibility that candidates may play upon name recognition. If competitors, for example, seek to confuse voters by nominating candidates with names similar to widely recognized or particularly strong candidates (for example, a particularly strong incumbent), the matching of incumbents' names may be more likely to generate an ambiguous match, making it more likely that my algorithm will match the incumbent to a weaker competitor that loses the subsequent election. An ambiguous match can occur in three ways. First, two candidates in the first election could be matched to the same candidate in the subsequent election. Second, a single candidate can be matched to two candidates in the subsequent elections. Because I am interested in a candidate's performance over time, however, it is also possible that allowing a match between a name in the first election and the subsequent election will create an inconsistency with another name already matched to one of the two names. In practice, if this effect exists, it is negligible. Row four of Table 5 displays the results of the model depicted by equation (6) but with probability of candidate's name being involved in an ambiguous match as the dependent variable. As the fourth row indicates, however, the probability of an ambiguous match is very low for marginal candidates and at most, this effect could change the estimated incumbency effects by 1.36 percent.

Finally, it is not uncommon for candidates in India to change constituencies. If this behavior is more likely for incumbents than non-incumbents, then because I match only within each constituency, I will be more likely to record an incumbent as having lost an election due to not rerunning when in fact, the candidate contested in another constituency. An easy solution would be to match candidates across all constituencies, but unfortunately, it becomes too likely at that point that a given match will prove ambiguous. Instead, I perform

another matching of the candidates, matching within party rather than within constituency.<sup>15</sup> I can then record whether or not a match occurred within the same constituency or across constituencies, leaving open only the rarer possibility that a candidate changes both parties and contests in a different constituency. The fifth row of Table 5 presents the results of an estimation of the differential relationship between incumbency and the probability of changing constituency. While the difference is almost statistically significant at the ten percent level, the point estimate is only 2.21 percent, suggesting that at most 2.21 percent of the estimated incumbency disadvantage results from candidates switching constituencies.

#### **D. Previous Periods**

Because of the large differences in the political climate prior to 1991, it is useful to ask whether or not the effects of incumbency were different before 1991. Table 6 shows the estimated advantage of being an incumbent for each national election, except for those in 1951 and 1977.<sup>16</sup> While not all of the point estimates are significant, it is clear that there was a break between the 1989 election and the 1991 elections. Before 1991, incumbents enjoy advantages of varying sizes, but starting in 1991, being an incumbent becomes a disadvantage in each election.

Figures 7 and 8 depict the non-parametric estimation of the relationship between the probability of victory in a given election and the margin of victory in the previous election. These figures differ from the Figure 4 in two ways. First, allowing for the discontinuity, there is at best a weak increasing relationship between the margin of victory and the probability of reelection. Second, however, the behavior at the discontinuity is the opposite of that shown in Figure 4 with incumbents being more likely to be elected than non-incumbents. The differences in the discontinuity are formalized in Tables 7 and 8 which present, for the pre-Emergency<sup>17</sup> and pre-1991 periods respectively, the same specifications that were presented in Table 4. Prior to the Emergency, incumbents enjoyed an advantage of being eleven percent more likely to win than non-incumbents. In the 1980, 1984 and 1989 elections, this advantage falls to about six to nine percent and becomes statistically insignificant. Finally, despite the insignificance of the level, the change that occurs after the 1989 election

---

<sup>15</sup> In India political parties tend to divide frequently. So, in the process of matching names within parties, I take care to group all of the splinter parties together when I encounter a party that has split.

<sup>16</sup> These years are omitted because there is no prior election to use to identify a sample of candidates. The election in 1951 is simply the first election ever. The election in 1977 is the first election after the emergency. Matching candidates from the 1971 election to outcomes in the 1977 election is prevented both by the imposition of martial law which made the experience of holding office over this period qualitatively different than holding office in other terms and by the fact that the constituency definitions changed after the 1971 elections.

<sup>17</sup> Unlike the period after the emergency, the political boundaries did change before the emergency. Rather than match names within constituency, I match instead by state which is feasible since, relative to after the Emergency, the number of total candidates is small. Additionally, for elections in 1951 and 1957, a number of constituencies elected two or three candidates. In these cases, all elected candidates are assumed to be incumbents. The margin of victory for winners is then calculated relative to the unelected candidate with the largest percentage of votes and the margin of victory for losers is calculated relative to the winner with the least votes.

(column four) is statistically significant, highlighting the importance of the political shift that occurred between the 1989 and 1991 elections.

The results for both the pre-Emergency and pre-1991 periods are strikingly similar to the results found for the United States Congressional elections by Lee (2001). First, incumbents are at an advantage when compared to non-incumbents. Second, part of the source of the incumbency advantage comes from the fact that non-incumbents are less likely than incumbents to rerun. As the twelfth rows in Tables 7 and 8 show, incumbents are seventeen (Pre-Emergency) and thirteen percent (Pre-1991) more likely to contest the subsequent election. In fact, the effect is large enough to constitute the entire advantage, raising questions about the cause and size of the effect. If, for example, winning candidates find it easier to garner support for a subsequent bid for election, then on average incumbents will prove more likely to win, not because they are stronger candidates, but because they are simply more likely to appear in the subsequent election.<sup>18</sup>

#### **E. Why the Change?**

Why were incumbents at an advantage prior to 1991 and at a disadvantage starting in 1991? The available data is not sufficient to identify a single cause but does suggest a possible explanation. The major political difference between the periods prior to 1991 and the period starting in 1991 is that in the first period, Congress could be expected to hold power in the Lok Sabha. Starting in 1991, control of the parliament oscillated between parties potentially making experience in the previous term less valuable. Using the structural model presented in Section II, it is possible that the uncertainty about which party controlled the parliament caused the degree to which voters benefited from a candidate's experience,  $\tilde{S}'(e)$ , to fall. Making a voter's valuation of additional experience,  $\tilde{V}'(e)$ , negative.<sup>19</sup>

To probe for potential causes of the disadvantage, I estimate the effects of incumbency status on different types of incumbents. I focus on constituencies with different observable characteristics. Specifically, constituencies are chosen conditional on whether the winner of the first election matches the identified criteria. This requires

---

<sup>18</sup> The interpretation of this effect as a bias depends critically on the definition of the incumbency effect. It could be argued, for example, that garnering support for re-election could be a component of the incumbency advantage. The goal of this estimation procedure, however, is not to estimate the relative strength of incumbents and non-incumbents over time, but to answer the counter-factual question, "How strong would an incumbent have been in an election had he or she not held office prior to the election?" Under this interpretation, anything that differentially affects the rate at which incumbents and non-incumbents run for office could bias the estimated incumbency effects.

<sup>19</sup> A critical assumption in this explanation is that the graft and service effects are affected to different degrees by the collapse of the stable political system. As Besley and Case (1995), however, make clear, voters can monitor and hence to some degree control more public activities like setting tax rates and enacting legislation. These are precisely the kinds of activities that would be affected by the loss of Congress's dominance. The less public activities that derive from holding office in the constituency and that are reportedly prone to corruption, like exerting influence in the awards of local government contracts and civil service appointments, were probably less affected.

care when interpreting the results. The regression discontinuity approach allows me to estimate the causal relationship between the probability of reelection and a candidate holding office prior to the election for each sub-sample. It is not correct, however, to interpret the differences between the incumbency effects for different subgroups as being caused by the differences in candidate characteristics. It is possible, for example, that the opposition that candidates face could vary depending on their characteristics. The purpose of this exercise is simply to compare average differences in the estimate incumbency effects for various subsets of the candidates. For each sub-sample, I estimate the incumbency effects using the spline estimator described above.

Congress candidates should be relatively more effective at working within the Congress system. If the stability of Congress's dominance made experience valuable, then incumbents affiliated with the Congress party should have a larger incumbency advantage than those not affiliated with Congress. Second, starting in 1991, Candidates from all parties should fare the same since no party can be counted on to control the parliament over the next term. As Table 9 shows this is roughly what happened. Row one lists the incumbency effect for incumbents that belong to the Congress party and the second row shows the effect for non-Congress candidates. Before 1991, Congress incumbents enjoyed an advantage of almost twenty percent compared to non-Congress incumbents who fared just as well as the non-incumbents that they faced. Starting in 1991, both groups experience large disadvantages with Congress incumbents seventeen percent less likely than their non-incumbent competitors to win an election and non-Congress candidates ten percent less likely.

Rows three and four of Table 9 divide constituencies by whether or not Congress dominated the constituency prior to 1991. An advantage of this approach is that, unlike in the previous comparison, constituencies cannot change groups over time. The results are consistent with those in rows one and two. Row three contains constituencies in which Congress won over half of the four elections between 1977 and 1989 and row four contains the remaining constituencies. Up to 1989, incumbents in Congress dominated constituencies enjoyed advantages of about thirty-five percent while incumbents in other constituencies fare as well as their non-incumbent competitors. Starting in 1991, however, all incumbents suffered a disadvantage with those from Congress dominated constituencies fourteen percent less likely to win an election and those from other constituencies eleven percent less likely to win.

Rows five through eight further divide the constituencies in rows one and two by the incumbent's level of experience. Specifically, I divide the constituencies based upon whether or not the incumbent has been an incumbent for two periods (a "serial" incumbent) or for only one period. Referring back to equation (10), if the change in the incumbency effects were driven by a change in  $\tilde{S}'(e)$  due to Congress's decline, The experience results should reflect the same pattern as the one that exists for party membership. Prior to 1991, experienced incumbents should outperform inexperienced incumbents and experience should be more valuable

for incumbents that belong to Congress. Starting in 1991, all the effects of incumbency should decline and all incumbents should fare equally well. If on the other hand, the disadvantage results from the fact that  $G'(e)$  increased because voters became more likely to expect that candidates would divert funds to for their own benefit, then experienced candidates should fare worse than inexperienced candidates starting in 1991.

The results are largely consistent with those in the first four rows. Prior to 1991, experienced incumbents outperformed inexperienced incumbents with experienced Congress incumbents having the largest advantage (fifty-six percent compared to about eleven percent for non-Congress incumbents). Starting in 1991, the incumbency effects for all types of incumbents except experienced Congress incumbents declined to a six to eleven percent disadvantage. Congress incumbents, on the other hand, fare much worse, falling to a disadvantage of twenty-seven percent. This could reflect that, at least for incumbents affiliated with Congress, the scandals that broke around the 1989 election made voters somewhat more suspicious of experienced candidates, possibly reflecting an increase in  $G'(e)$ .

Finally, I check a possible alternative explanation for these results. In the preceding discussion, I have assumed that voters choose to vote for a candidate based upon value that voters expect to derive from voting for the particular candidate. A vote for a candidate, however, is also a vote for a party, and it is possible that voters' valuation of a candidate is dominated by the voters' valuation of the party that the candidate represents. If this is true, then the poor performance of non-Congress incumbents prior to 1991 could be explained by voters' general preference for Congress, and the incumbency disadvantage that began in 1991 could simply reflect voters' changing preferences for candidates of different parties. Elected when their party was in favor, incumbents lost in subsequent election since voters' preferences increasingly switched to an opposing party.

Row nine of Table 9 contains incumbents that belong to a major party that either wins an outright majority or joins the coalition formed in the given election. Row ten on the other hand contains only incumbents of major parties that fall from power in the given election. If the cycling effect dominates, then incumbents in row nine should enjoy an advantage while incumbents in row ten should suffer a disadvantage. This pattern, however, is not evident in the data. Prior to 1991, incumbents that belong to a party that is coming to power enjoy a large advantage. This is consistent with the results in the previous rows since except for the 1989 election, this row contains primarily Congress candidates. Starting in 1991 when power switched first to and then away from Congress, all incumbents suffer a similar disadvantage. Those that belong to parties that are coming to power are seventeen percent less likely to win than their non-incumbent competitors and those falling from power are twelve percent less likely to win.

In general, the results seem to be consistent with a model in which Congress's dominance before 1989 provided a stable political system in which voters could expect that the experience candidates developed while holding office would make them more valuable in future terms. Starting in 1991, this experience became less valuable since the party that held office in a given term could not be counted on to win the next election. The effect does not seem to be the result of parties cycling through power, and there is some evidence that voters find experienced Congress incumbents less valuable than inexperienced incumbents or experienced incumbents from other parties, possibly as a result of Congress's reputation for corruption over the period in question.

## **Section VI: Conclusion**

This study documents the surprising fact that unlike the results of studies that investigate the effects of incumbency in the U.S. and other countries, incumbents in Indian national parliamentary elections starting in 1991 are at a disadvantage compared to those candidates that do not hold office prior to contesting an election. I estimate the causal effects of incumbency using a non-parametric regression discontinuity design which relies on comparing incumbents that are barely elected to non-incumbents that barely lose. The results indicate that in marginal elections, incumbents are fourteen percent less likely to win an election than non-incumbents. This is an enormous deficit. To make up such a loss, an incumbent would have to have won the previous election by over five and a half percent of the popular vote, a change equivalent to an incumbent moving from the first to the thirty-fifth percentile of elected officials ranked by margin of victory.

In addition to other contexts, the disadvantage is also in contrast to results from before the 1991 election when incumbents seem to have enjoyed advantages almost as large in magnitude. Congress dominated the Indian national parliament prior to 1989 while afterwards control of the parliament oscillated between political parties. Comparing subsets of constituencies over time reveals two suggestive facts. First, the change in the effect of incumbency seems to be concentrated in constituencies that were represented by incumbents affiliated with the Congress party. Second, after 1989, incumbents from all parties seem to fair equally poorly. The results are generally consistent with a model in which prior to 1991, voters valued the experience of incumbents because they had experience working within the Congress system and Congress was likely to continue holding power. Starting in 1991, however, because control of parliament was likely to change hands, experience over the previous term proved less valuable to voters.

## Bibliography

- Acemoglu, Daron (2002) "Why Not a Political Coase Theorem? Social Conflict, Commitment a Politics" MIT Mimeo.
- Acemoglu, Daron, Simon Johnson and James Robinson (2001) "The Colonial Origins of Comparative Development: An Empirical Investigation," *American Economic Review*. 91:1369-1401.
- Ahuja, M. L. and Sharda Paul (1992). *1989-1991 General Elections in India*. Associated Publishing House: New Delhi, India.
- Alford, John R. and John R. Hibbing. (1981) "Increased Incumbency Advantage in the House," *The Journal of Politics*. 43(4): 1042-1061.
- Ansolabehere, Stephen and James M. Snyder, Jr. (2002) "Using Term Limits to Estimate Incumbency Advantages when Office Holders Retire Strategically," MIT Mimeo.
- Austin-Smith, David and Jeffrey Banks (1989) "Electoral Accountability and Incumbency," *Models of Strategic Choice in Politics*. Ed. Peter C. Ordeshook. Ann Arbor: The University of Michigan Press.
- Banks, Jeffrey S. and Rangarajan K. Sundaram (1993) "Adverse Selection and Moral Hazard in Repeated Elections Model" *Political Economy: Institutions, Competition, and Representation*. Ed. William A. Barnett, Melvin J. Hinich, and Normal J. Schofield. Cambridge: Cambridge University Press.
- Banerjee, Abhijit and Lakshmi Iyer (2002) "History, Institutions and Economic Performance: The Legacy of Colonial Land Tenure Systems in India," MIT Mimeo.
- Bertrand, Marianne, Esther Duflo, and Sendhil Mullainathan (2003). "How Much Should We Trust Differences-In-Differences Estimates?" MIT Mimeo.
- Besley, Timothy and Anne Case, "Incumbent Behavior: Vote-Seeking, Tax-Setting, and Yardstick Competition," *American Economic Review*, 85(1): 25-45.
- Chattopadhyay, Raghavendra and Esther Duflo (2003). "Women as Policy Makers: Evidence from a Randomized Policy Experiment in India," *NBER working paper #8615*.
- Chattopadhyay, Raghavendra and Esther Duflo (2003). "Efficiency and Rent Seeking in Local Governments," MIT Mimeo.
- Collie, Melissa P. (1981) "Incumbency, Electoral Safety, and Turnover in the House of Representatives, 1952-1976," *The American Political Science Review*. 75(1): 119-131.
- Delimitation Commission of India (2003). "Delimitation." <http://www.delimitation-india.com>.
- Election Commission of India (2003). <http://www.eci.gov.in>.
- Fan, Jianqing (1992). "Design-Adaptive Non-Parametric Regression," *Journal of the American Statistical Association*. 87(420): 998-1004.
- Fan, Jianqing and I. Gijbels (1996). *Local Polynomial Modelling and Its Applications*. Chapman and Hall: London, 1997.

- Frank, Katherine (2001). *Indira: The Life of Indira Nehru Gandhi*. Harper Collins Publishers: London, England.
- Garand, James C. and Donald A. Gross (1984) "Changes in the Vote Margins for Congressional Candidates: A Specification of Historical Trends," *The American Political Science Review*. 78(1): 17-30.
- Gelman, Andrew and Gary King (1990) "Estimating Incumbency Advantage without Bias," *American Journal of Political Science*. 34(4) 1142-1164.
- Gould, Harold A. and Sumit Ganguly (1993) *India Votes: Alliance Politics and Minority Governments in the Ninth and Tenth General Elections*. Boulder: Westview Press.
- Gupta, R. L. (1985) *Electoral Politics in India*. Discovery: Delhi, India.
- Hahn, Jinyong, Petra Todd, and Wilbert Van der Klaauw (2001). "Identification and Estimation of Treatment Effects with a Regression-Discontinuity Design," *Econometrica*. 69(1): 201-209.
- Indian Parliament (2003). <http://www.parliamentofindia.nic.in>.
- Jacobson, Gary C. (1987) "The Marginals Never Vanished: Incumbency and Competition in Elections to the U.S. House of Representatives, 1952-1982," *American Journal of Political Science*. 31(1): 126-141.
- Jai, Janak Raj (1998) *Voter's Delima: Indian Political Scene*. Regency Publications: New Delhi, India.
- Kashyap, Subhash (1988). *Parliament of India: Myths and Realities*. National Publishing House: New Delhi, India.
- Kashyap, Subhash (1992). *The Ten Lok Sabhas: From the First to the Tenth, 1952-1991*. Shipra Publications: New Delhi, India.
- Lee, David (2001). "The Electoral Advantage to Incumbency and Voters' Valuation of Politicians' Experience: A Regression Discontinuity Analysis of Elections to the U.S. House," NBER Working Paper #8441.
- Levitt, Steven D., and Catherine D. Wolfram. (1997) "Decomposing the Sources of Incumbency Advantage in the U.S. House," *Legislative Studies Quarterly*. 22: 45-60.
- Mayhew, David R. (1975) "Congressional Elections: The Case of the Vanishing Marginals" *Polity*. 6:310-312.
- Majeed, Akhtar (2000) *Coalition Politics and Power Sharing*. Manak Publications: New Delhi, India.
- Miguel, Edward and Farhan Zaidi (2003). "Do Politicians Reward their Supporters? Public Spending and Incumbency Advantage in Ghana," UC Berkeley Mimeo.
- Mirchandani, G. G. and K. S. R. Murthi (1985) *Massive Mandate for Rajiv Gandhi: 1984 Lok Sabha Elections*. Sterling: New Delhi, India.
- Pande, Rohini (2003) "Can Mandated Political Representation Provide Disadvantaged Minorities Policy Influence? Theory and Evidence from India," *American Economic Review*. 93(4): 1132-1151.
- Porter, Jack R. (2002). "Asymptotic Bias and Optimal Convergence Rates for Semiparametric Kernel Estimators in the Regression Discontinuity Model," HIER Discussion Paper No. 1989.

Rana, Mahendra Singh (2000) *India Votes: Lok Sabha and Vidhan Sabha Elections 1999, 2000: Poll Analysis, Election Data, and Party Manifestos*. New Delhi: B.R. Publishing Corp.

Roy, Meenu (1996) *India Votes, Elections 1996: A Critical Analysis*. New Delhi: Deep and Deep Publications.

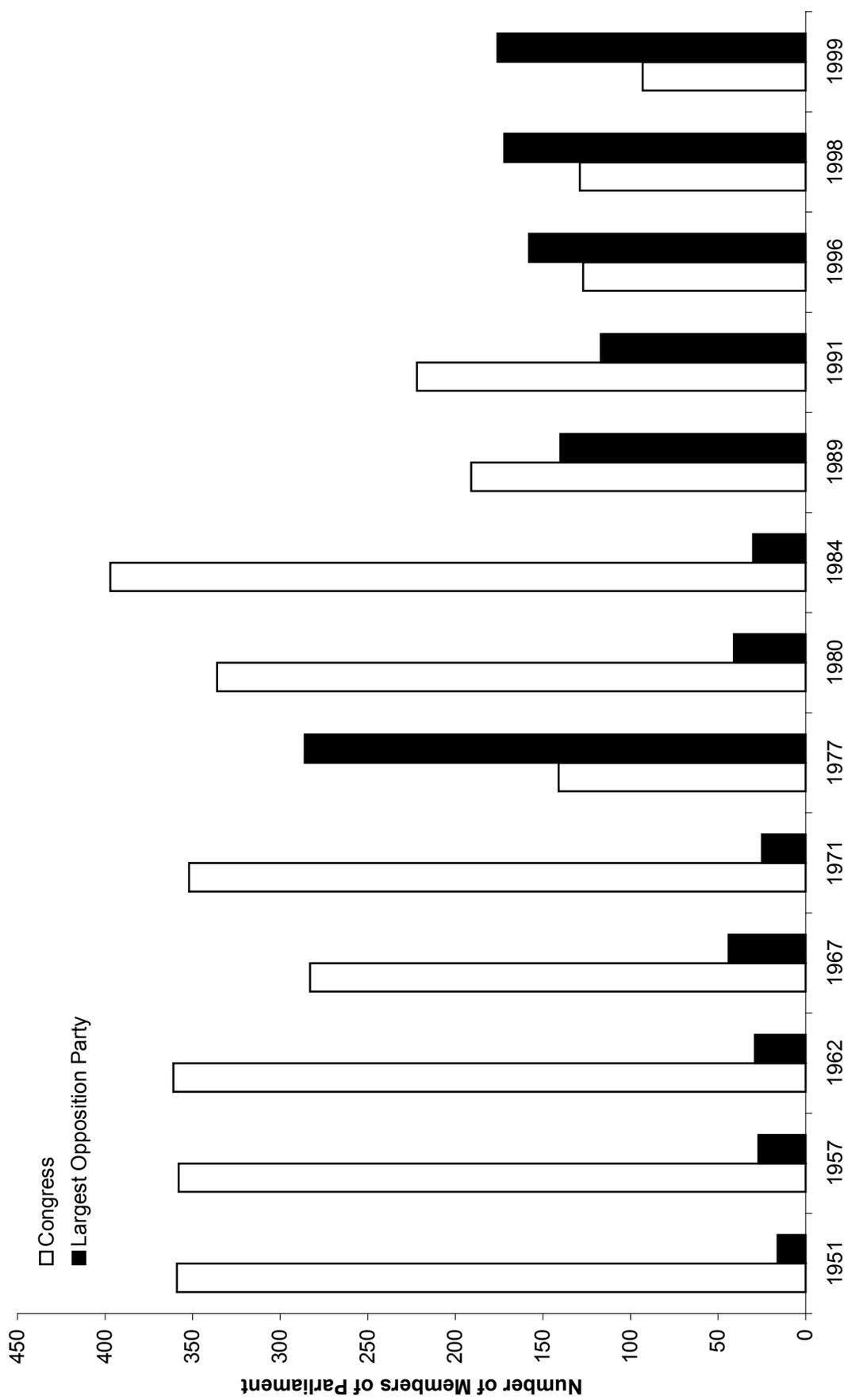
Roy, Ramashray and Paul Wallace (1999) *Indian Politics and the 1998 Election: Regionalism, Hidutva, and the State Politics*. New Delhi: Sage Publications.

Sharda, Paul (1990) *1989 General Elections in India*. New Delhi: Associated Publishing House.

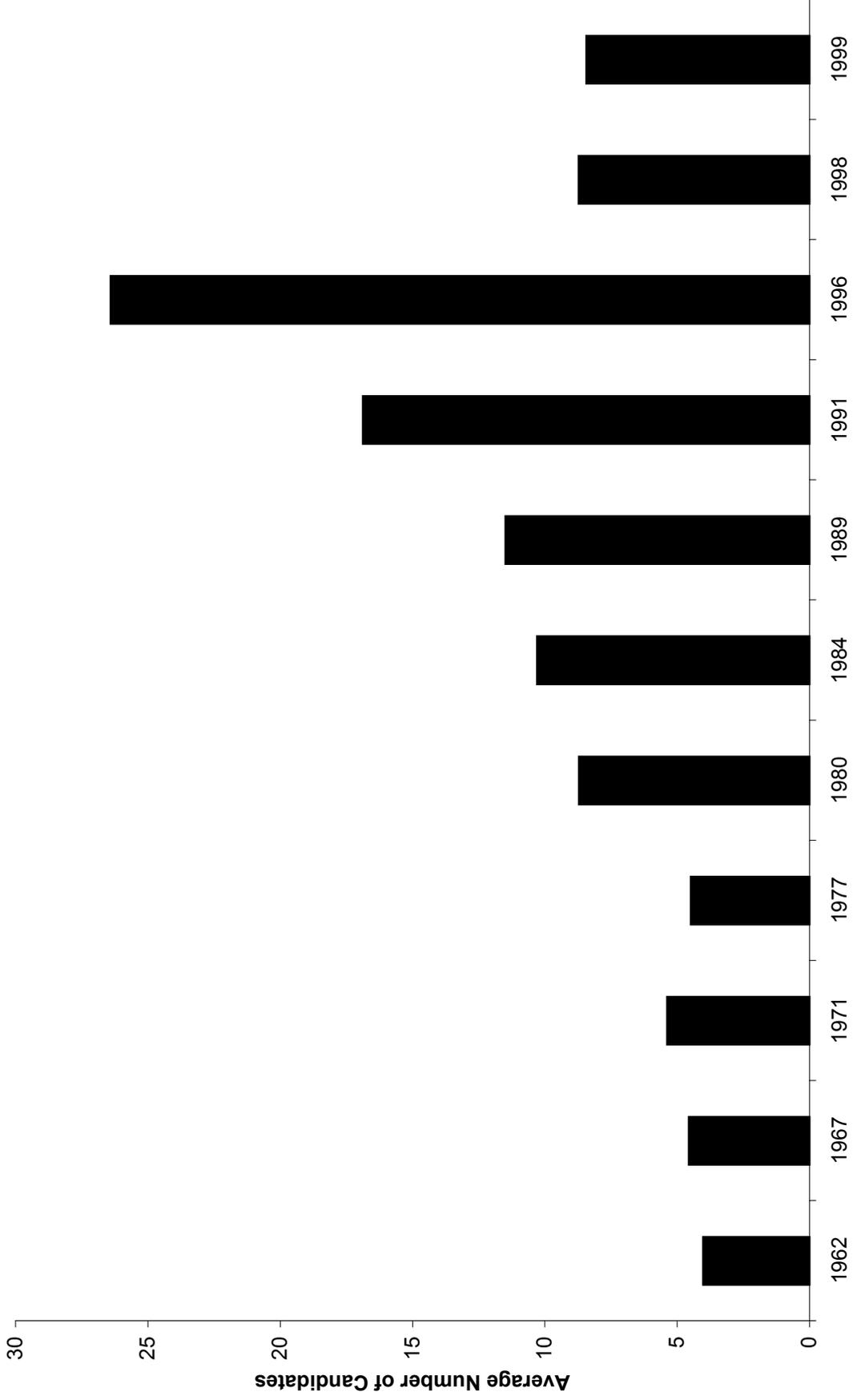
Tufte, Edward R. (1973). "The Relationship Between Seats and Votes in Two-Party Systems," *American Political Science Review*. 67:549-553.

Weiner, Myron (1983) *India at the Polls, 1980: A Study of the Parliamentary Election*. American Enterprise Institute for Public Policy Research: Washington, DC.

Figure 1: Membership in Lok Sabha



**Figure 2: Average Number of Candidates per Constituency**



**Figure 3: Number of Parties with at Least 10 Candidates**

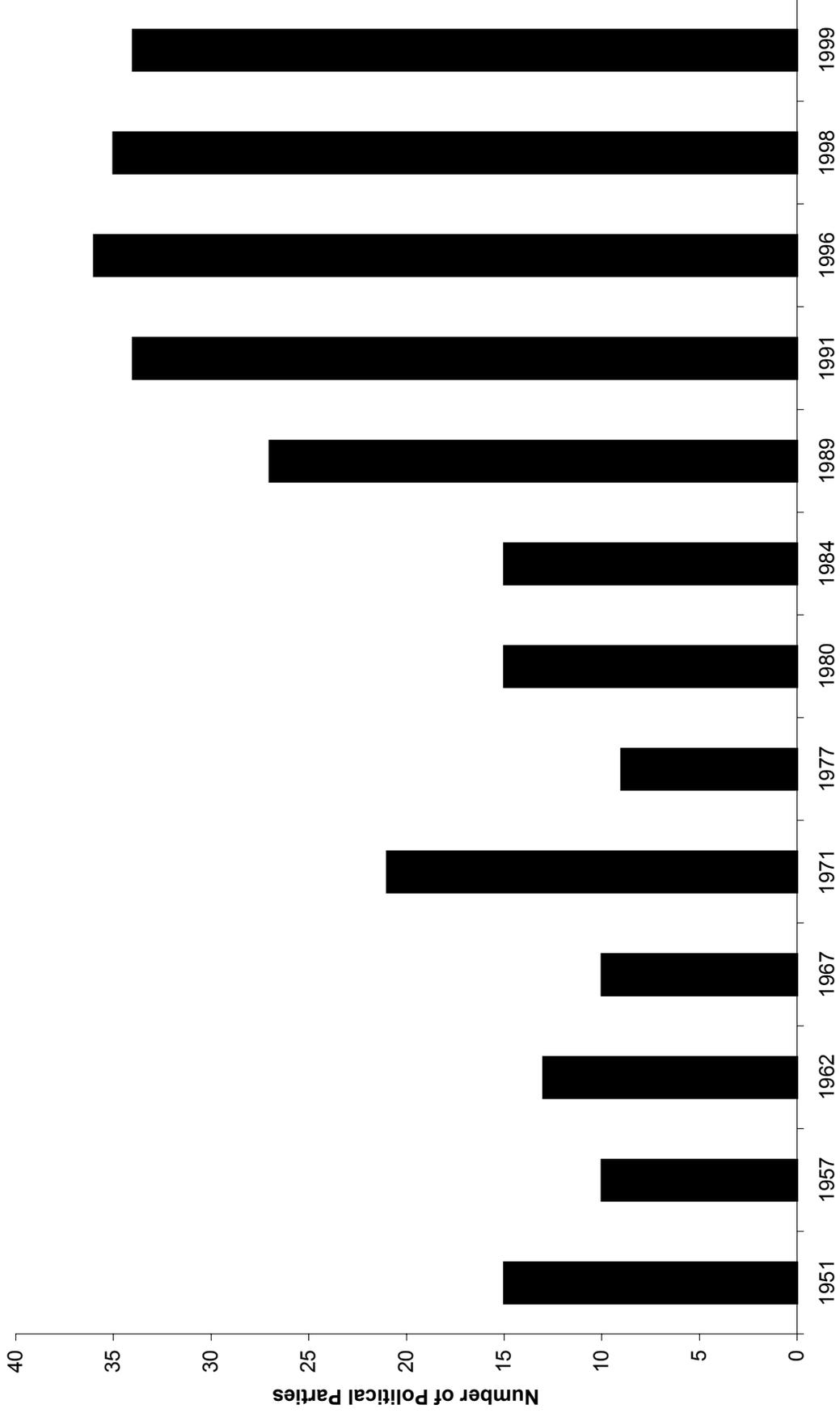


Figure 4: Probability of Re-election, 1991-1999

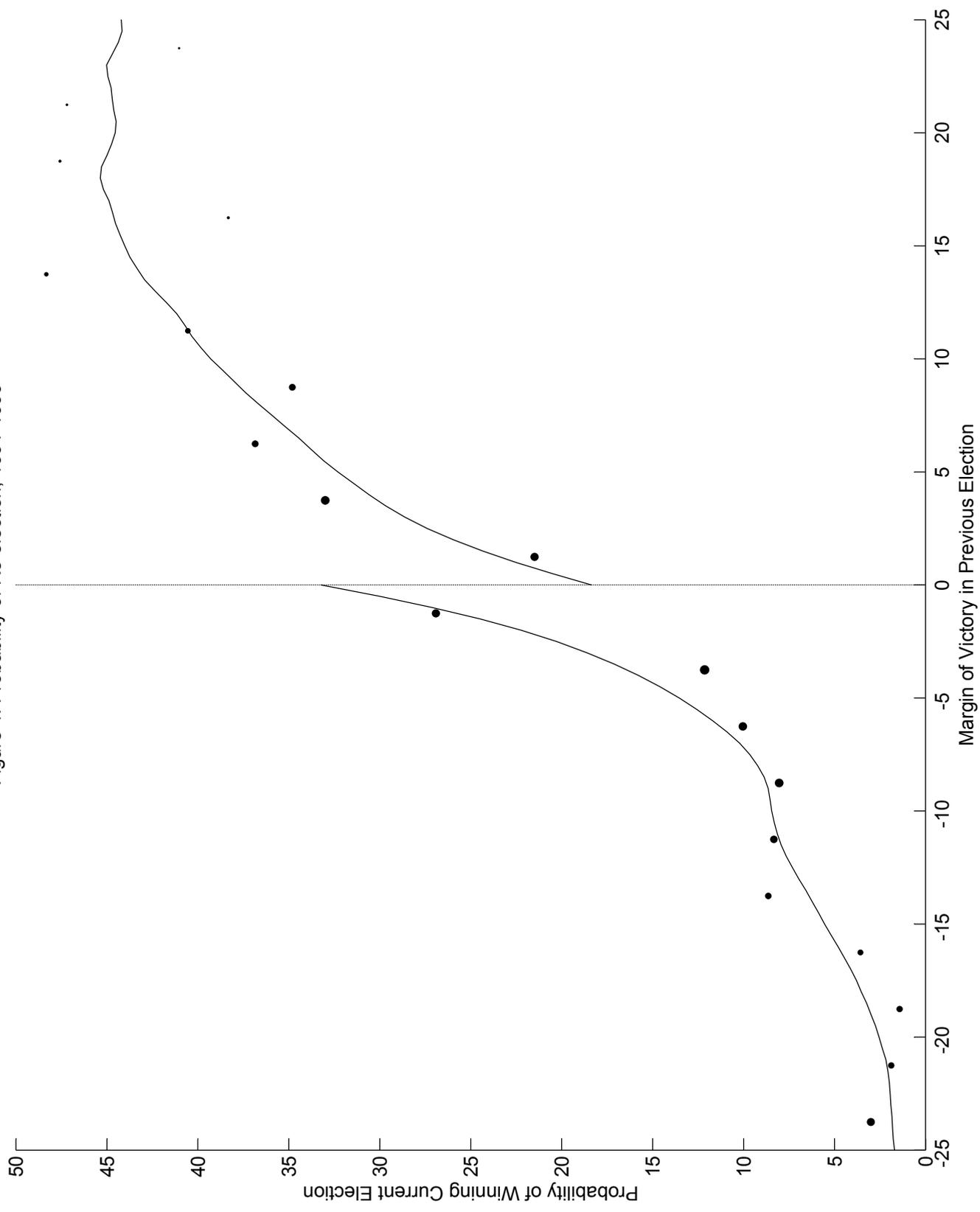


Figure 5: Probability of Re-election, 1991-1999, Full Support

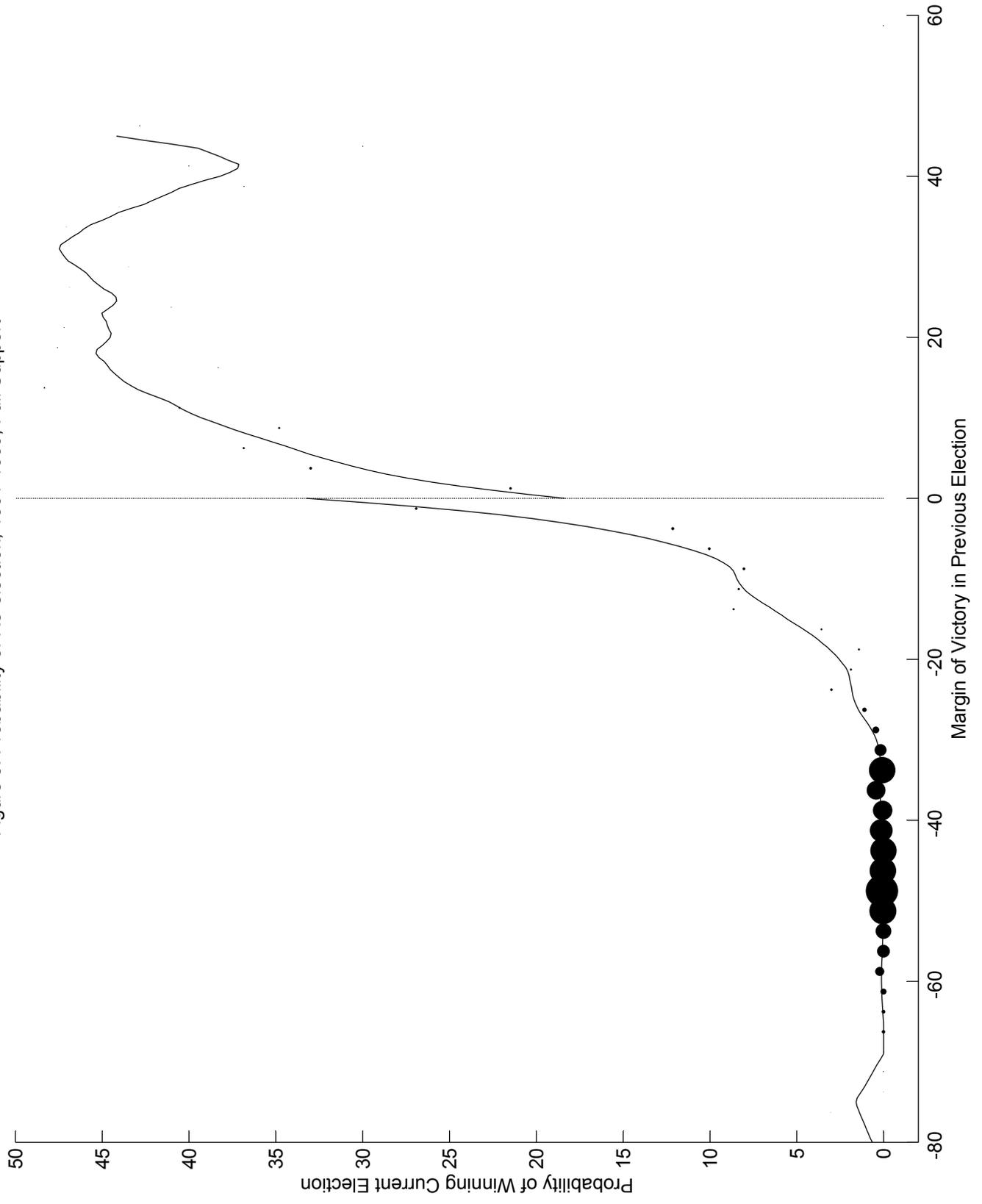


Figure 6: Probability of Re-Running, 1991-1999

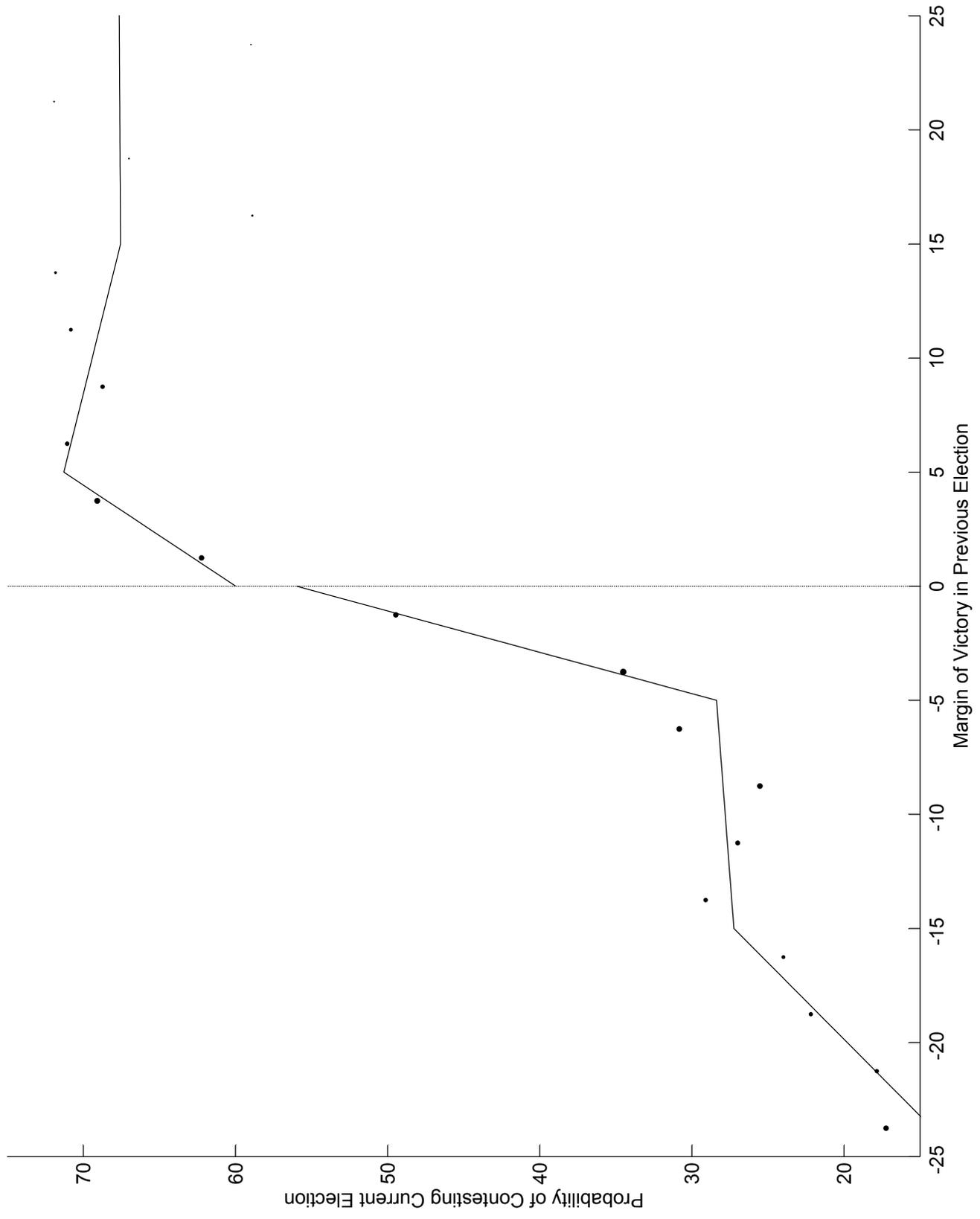


Figure 7: Probability of Re-election, 1957-1971

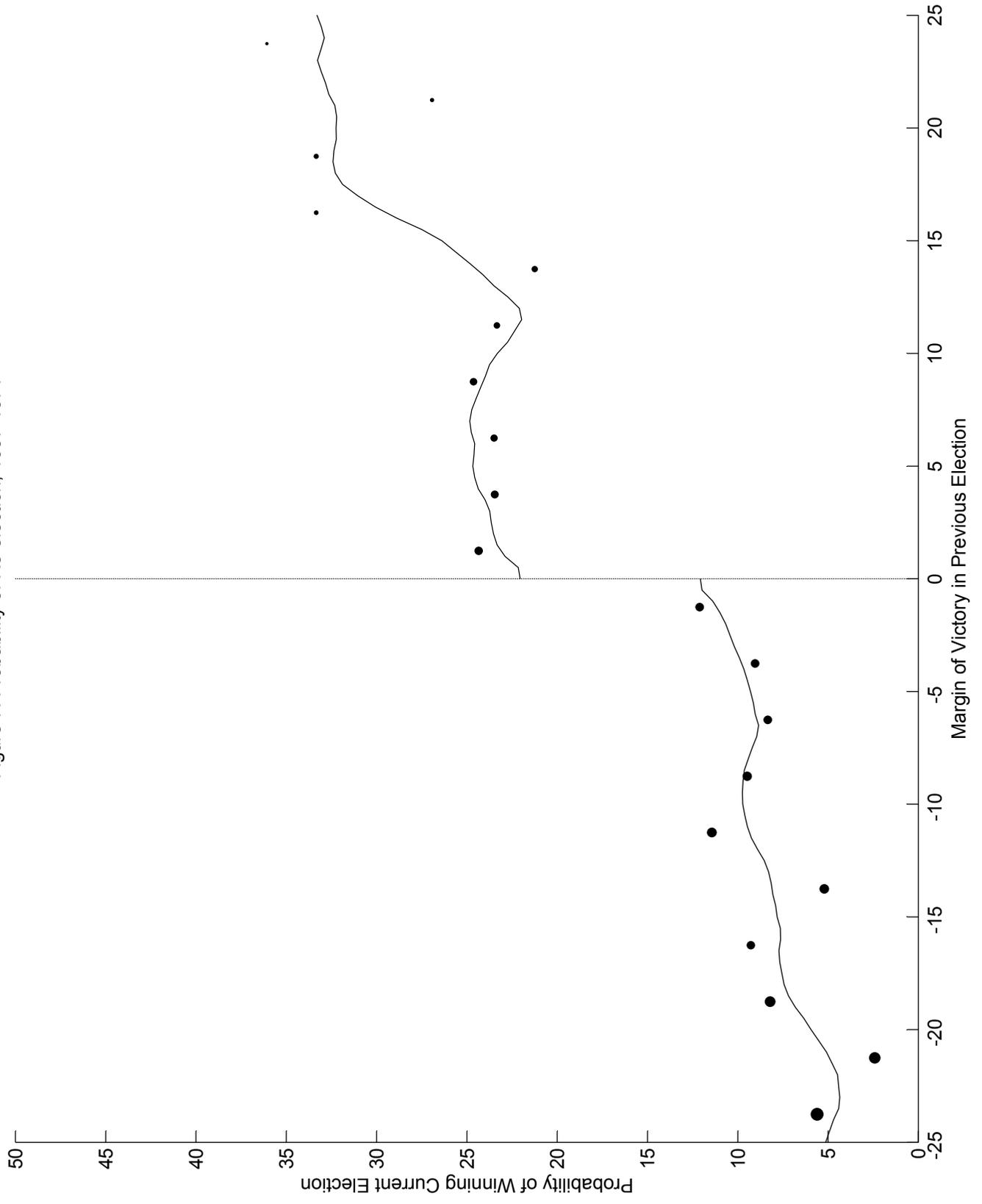
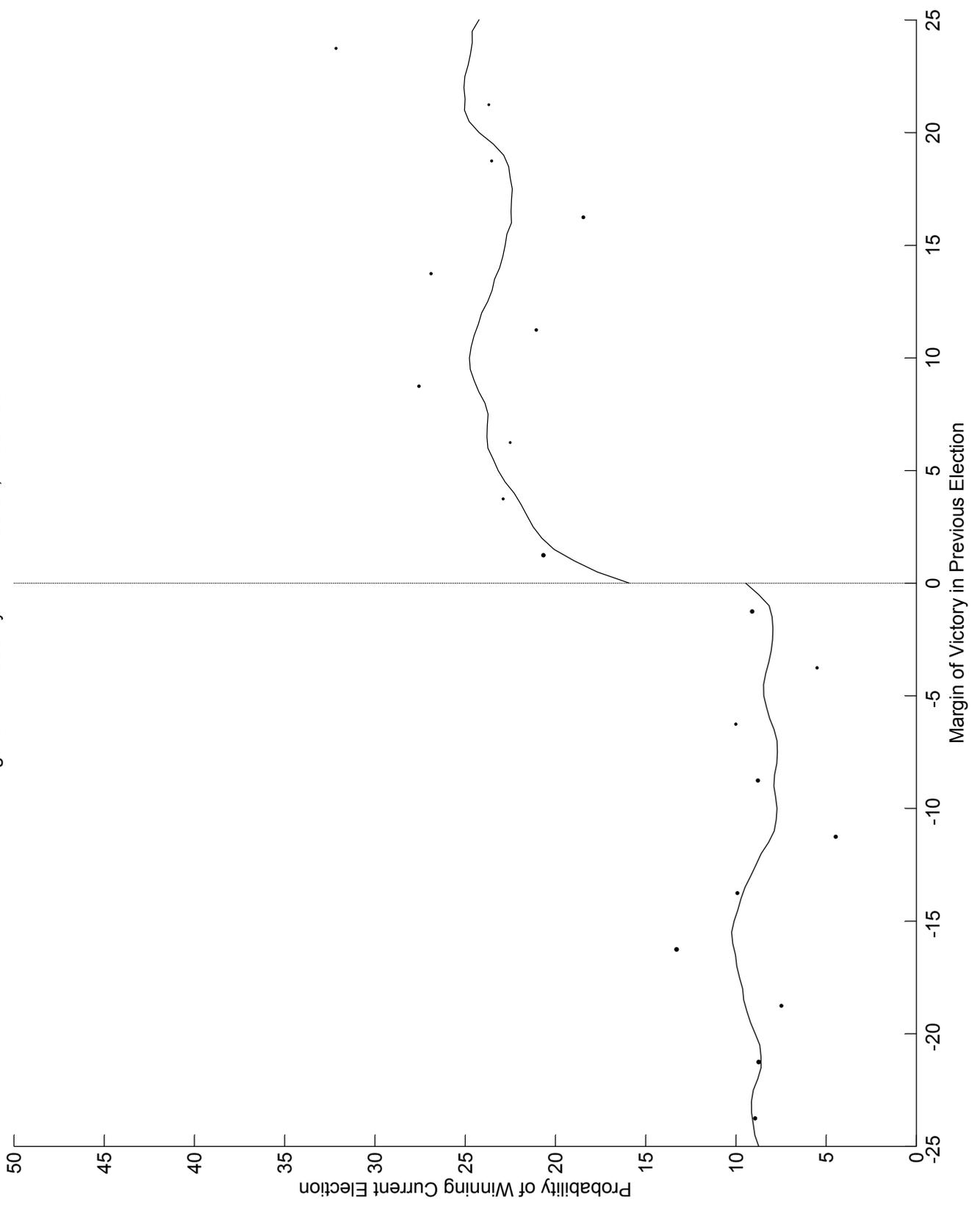


Figure 8: Probability of Re-election, 1980-1989



**Table 1: Average Characteristics of Constituencies**

Constituency Characteristic	1991-1999		1980-1989	
	Marginal	Non-Marginal	Marginal	Non-Marginal
% Female	4.8%	4.7%	3.1%	2.9%
# Previous Elections Won	0.19	0.22	0.09	0.08
# Years Experience	0.59	0.73	0.33	0.29
# Previous Elections Contested	0.50	0.50	0.21	0.18
% Belong to Congress	11.0%	9.9%	13.6%	16.0%
% Belong to BJP	7.3%	7.6%	2.2%	1.7%
% Reserved for Tribes	6.9%	8.4%	6.4%	8.0%
% Reserved for Castes	14.5%	15.3%	13.8%	15.3%
Number Electors	1,087,370	1,081,797	771,193	726,926
Number Voters	650,423	628,965	488,943	436,029
Number of Candidates	14.8	15.5	9.1	8.6
% of Voters Polled	60.0%	58.8%	63.3%	59.9%
% with margin of victory less than 5% at least once		90.1%		73.2%

**Table 2: Average Election Rates of Candidates, 1991-1999**

Subset of Candidates	Average Election Rates		
	Inc	Non-Inc	Diff
All Candidates	37.78*** (3.28)	0.86*** (0.07)	36.92*** (3.30)
Won or Lost by Less than 15 Percent	34.42*** (4.04)	12.46*** (1.17)	21.95*** (4.71)
Won or Lost by Less than 2.5 Percent	21.48*** (2.23)	26.91*** (4.32)	-5.43 (5.60)

**Table 3: Average Characteristics of Candidates, 1991-1999**

Candidate Characteristic	All Candidates			Margin of Victory  < 2.5*		
	Inc	Non-Inc	Diff	Inc	Non-Inc	Diff
% Female	6.9%	3.9%	3.1%	7.8%	8.4%	-0.6%
# Previous Elections Won	0.75	0.05	0.70	0.69	0.54	0.15
# Years Experience	2.62	0.19	2.44	2.38	1.81	0.57
# Previous Elections Contested	1.09	0.27	0.82	1.09	0.93	0.16
% Belong to Congress	33.2%	4.1%	29.1%	35.6%	33.1%	2.5%
% Belong to BJP	26.3%	3.1%	23.2%	21.9%	25.5%	-3.6%

\* Includes only candidates who win or lose an election by less than five percent of the popular vote

**Table 4: Incumbency Effects, 1991 to 1999**

	Estimates at Discontinuity		
	Inc	Non-Inc	Diff
<b>Probability of Winning</b>			
<b>Non-Parametric</b>	18.37*** (1.34)	33.24*** (1.24)	-14.87*** (1.82)
<b>Local Linear Fit</b>	19.42*** (3.00)	33.71*** (5.46)	-14.29** (5.98)
<b>Quartic Polynomial</b>			
<b>No Fixed Effects</b>	17.39*** (4.57)	36.65*** (5.31)	-19.26*** (6.77)
<b>Fixed Effects</b>	20.49*** (6.77)	39.7*** (6.85)	-19.21*** (7.33)
<b>Spline</b>			
<b>No Fixed Effects</b>	19.72*** (2.82)	32.05*** (4.91)	-12.34** (6.15)
<b>Fixed Effects</b>	19.46*** (2.65)	31.71*** (5.23)	-12.25** (6.19)
<b>Continuity Checks</b>			
<b>Female</b>	7.532*** -2.012	8.42*** -1.452	-0.888 -3.071
<b>Membership of Congress</b>	34.454*** (4.93)	34.845*** (7.08)	-0.39 (5.31)
<b>Num Previous Elections Won</b>	.68*** (0.09)	.563*** (0.06)	0.117 (0.08)
<b>Num Years MP Experience</b>	2.344*** (0.33)	1.921*** (0.24)	0.423 (0.31)
<b>Num Elections Contested</b>	1.063*** (0.11)	.953*** (0.09)	0.11 (0.11)
<b>Probability of Rerunning</b>	59.98*** (4.38)	55.98*** (6.16)	4 (5.63)
<b>Probability of Winning</b>			
<b>Conditional of Rerunning</b>	33.23*** (4.29)	60.3*** (5.88)	-27.07*** (8.57)

Note: Standard deviations of point estimates, clustered by states, in parenthesis.

MISE minimizing bandwidth for Local Polynomial Regression is 6.27.

Unless otherwise stated, estimates generated using spline estimator.

**Table 5: Sources of Bias in Estimation of Incumbency Effects**

	Estimates at Discontinuity		
	Inc	Non-Inc	Diff
<b>Levels of Name Matching</b>			
Entire String	16.68*** -1.75	27.83*** -3.79	-11.15*** -3.67
Reorder and Missing Names Exact Match Required	20.99*** (2.65)	31.86*** (3.46)	-10.87** (4.83)
Reorder of Names and Partial Matching	19.46*** (2.65)	31.71*** (5.23)	-12.25** (6.19)
Ambiguous Matches	0.27 (0.61)	1.63 (1.04)	1.36 (0.99)
Constituency Switching	5.84*** -1.52	3.63*** -1.56	2.21 -1.3

Note: Standard deviations of point estimates, clustered by states, in parenthesis.  
Estimates generated using spline estimator.

**Table 6: Incumbency Effects by Year**

<b>Year</b>	<b>Inc</b>	<b>Non-Inc</b>	<b>Diff</b>
<b>1957</b>	16.48 (10.36)	14.25 (9.21)	2.23 (18.08)
<b>1962</b>	27.65*** (9.24)	10.73* (6.08)	16.92** (7.16)
<b>1967</b>	21.12*** (4.93)	10.08** (4.69)	11.04 (7.21)
<b>1971</b>	32.13*** (5.97)	9.79* (5.88)	22.34** (10.23)
<b>1980</b>	27.65*** (8.97)	15.18* (8.70)	12.47 (12.75)
<b>1984</b>	12.13* (6.90)	6.2 (8.46)	5.93 (11.46)
<b>1989</b>	16.66*** (5.06)	6.91* (3.60)	9.75 (7.47)
<b>1991</b>	21.28** (8.79)	40.92*** (7.24)	-19.64 (12.09)
<b>1996</b>	15.32** (6.00)	19.23*** (6.50)	-3.92 (5.07)
<b>1998</b>	19.57** (7.97)	27*** (6.00)	-7.43 (11.27)
<b>1999</b>	21.75*** (5.46)	38.47*** (10.07)	-16.71 (14.12)

Note: Standard deviations of point estimates, clustered by states, in parenthesis.  
Estimates generated using spline estimator.

**Table 7: Incumbency Effects, 1951 to 1967**

	Estimates at Discontinuity		
	Inc	Non-Inc	Diff
<b>Probability of Winning</b>			
<b>Non-Parametric</b>	23.01*** (1.25)	11.95*** (1.66)	11.05*** (2.08)
<b>Local Linear Fit</b>	23.59*** (3.26)	12.38*** (3.60)	11.22** (5.25)
<b>Quartic Polynomial</b>			
<b>No Fixed Effects</b>	23.66*** (5.33)	12.06*** (3.57)	11.6 (7.42)
<b>Fixed Effects</b>	24.6*** (5.04)	13*** (3.87)	11.6 (7.44)
<b>Spline</b>			
<b>No Fixed Effects</b>	24.79*** (4.32)	11*** (3.45)	13.79** (6.23)
<b>Fixed Effects</b>	26.7*** (4.17)	12.98*** (3.48)	13.72** (6.21)
<b>Continuity Checks*</b>			
<b>Female</b>	-2.09 (1.48)	-0.35 (2.48)	-1.74 (2.91)
<b>Membership of Congress</b>	53.125*** (3.10)	51.21*** (3.53)	1.914 (5.99)
<b>Num Previous Elections Won</b>	-.261*** (0.05)	-.289*** (0.05)	0.029 (0.06)
<b>Num Years MP Experience</b>	-1.384*** (0.26)	-1.54*** (0.27)	0.156 (0.30)
<b>Num Elections Contested</b>	-.721*** (0.10)	-.743*** (0.10)	0.022 (0.07)
<b>Probability of Rerunning</b>	70.43*** (7.63)	53.04*** (5.50)	17.39* (9.96)
<b>Probability of Winning</b>			
<b>Conditional of Rerunning</b>	40.3*** (4.59)	24.57*** (5.87)	15.72* (8.55)

Note: Standard deviations of point estimates, clustered by states, in parenthesis.

MISE minimizing bandwidth for Local Polynomial Regression is 4.37.

Unless otherwise stated, estimates generated using spline estimator.

\* Negative point estimates are the result of using an estimator that does not restrict the range to the [0,1] interval.

**Table 8: Incumbency Effects, 1980 to 1989**

	Estimates at Discontinuity			1980-89 less
	Inc	Non-Inc	Diff	1991-99
<b>Probability of Winning</b>				
<b>Non-Parametric</b>	15.9*** (1.37)	9.46*** (1.89)	6.44*** (2.33)	-21.31*** (4.15)
<b>Local Linear Fit</b>	16.16*** (4.74)	8.77** (4.08)	7.39 (7.14)	-21.68*** (6.26)
<b>Quartic Polynomial</b>				
<b>No Fixed Effects</b>	14.98*** (4.30)	5.49 (5.07)	9.48 (6.99)	-28.75*** (7.21)
<b>Fixed Effects</b>	40.06*** (5.04)	30.31*** (6.54)	9.75 (8.17)	-29.4*** (7.61)
<b>Spline</b>				
<b>No Fixed Effects</b>	17.39*** (4.36)	8.3*** (3.13)	9.08 (5.66)	-21.42*** (5.08)
<b>Fixed Effects</b>	18.62*** (4.70)	9.44*** (3.11)	9.18 (5.78)	-21.45*** (5.09)
<b>Continuity Checks</b>				
<b>Female</b>	7.54*** (2.65)	5.83** (2.38)	1.71 (3.22)	
<b>Membership of Congress</b>	54.519*** (4.99)	47.792*** (7.09)	6.727 (9.74)	
<b>Num Previous Elections Won</b>	.281*** (0.06)	.303*** (0.06)	-0.022 (0.08)	
<b>Num Years MP Experience</b>	1*** (0.20)	1.003*** (0.19)	-0.003 (0.28)	
<b>Num Elections Contested</b>	.246*** (0.07)	.347*** (0.07)	-0.101 (0.07)	
<b>Probability of Rerunning</b>	39.35*** (10.77)	26 (17.14)	13.34 (19.01)	-7.88 (7.96)
<b>Probability of Winning</b>				
<b>Conditional of Rerunning</b>	35.23*** (5.16)	23.85*** (5.35)	11.38 (8.87)	-42.63*** (14.12)

Note: Standard deviations of point estimates, clustered by states, in parenthesis.

MISE minimizing bandwidth for Local Polynomial Regression is 5.43.

Unless otherwise stated, estimates generated using spline estimator.

**Table 9: Incumbency Effects by Incumbent Characteristics**

Sub-Division	Pre-1991 (1980-1989)			Post-1989 (1991-1999)			Pre-'91 vs. Post-'89
	Inc	Non-Inc	Diff	Inc	Non-Inc	Diff	
<b>Congress Party</b>	25.83*** (8.72)	6.34* (3.50)	19.49* (10.35)	11.26*** (4.24)	28.44*** (5.36)	-17.18** (8.12)	-36.67*** (10.84)
<b>Non-Congress Party</b>	9.3** (4.31)	10.05 (6.58)	-0.75 (6.72)	24.46*** (3.76)	34.03*** (5.34)	-9.56 (7.64)	-8.81 (8.84)
<b>Congress Party Held Constituency For 3 or 4 Terms before 1991</b>	37.28*** (8.28)	1.84 (2.18)	35.44*** (8.84)	18.57*** (4.89)	32.96*** (6.61)	-14.4 (8.77)	-49.84*** (9.54)
<b>Congress Party Held Constituency For less than 3 Terms before 1991</b>	8.33*** (3.19)	11.11*** (4.13)	-2.77 (4.01)	20.29*** (4.62)	31.57*** (6.11)	-11.27 (7.72)	-8.5 (6.58)
<b>Serial<sup>†</sup> Congress Party Incumbent</b>	60.26*** (22.21)	3.98 (8.25)	56.28** (26.19)	7.93 (6.88)	35.27*** (10.36)	-27.34** (13.76)	-83.62*** (28.04)
<b>Non-Serial Congress Party Incumbent</b>	19.42** (7.92)	6.69 (4.17)	12.73 (9.89)	12.87*** (4.96)	23.77*** (6.01)	-10.9 (8.95)	-23.62** (10.10)
<b>Serial Non-Congress Party Incumbent</b>	8.24* (4.62)	-2.44 (2.58)	10.68** (5.35)	30.73*** (9.00)	36.56*** (7.70)	-5.84 (13.01)	-16.52 (13.38)
<b>Non-Serial Non-Congress Party Incumbent</b>	10.42* (5.78)	13.61 (8.26)	-3.19 (8.02)	22.78*** (4.07)	33.17*** (6.13)	-10.39 (7.98)	-7.2 (9.99)
<b>Incumbent Belongs to Party Coming to Power</b>	21.35*** (5.02)	3.86 (3.14)	17.5*** (6.46)	14.3*** (4.46)	30.92*** (7.31)	-16.61* (9.34)	-34.11*** (9.63)
<b>Incumbent Belongs to Party Falling from Power</b>	17.39*** (4.36)	8.3*** (3.13)	9.08 (5.66)	19.72*** (2.82)	32.05*** (4.91)	-12.34** (6.15)	-21.42*** (5.08)

Note: Standard deviations of point estimates, clustered by states, in parenthesis.

Estimates generated using spline estimator.

<sup>†</sup> Serial incumbents refers to incumbents that hold office for two terms prior to an election