

# Welfare Gains from a Redrawing of Political Boundaries: Evidence from State Reorganization in India

Rajashri Chakrabarti \*  
Harvard University

Joydeep Roy<sup>†</sup>  
Princeton University

## Abstract

This paper analyzes the impact of a redrawing of political boundaries on voting patterns. It investigates whether secession of states leads to welfare gains in terms of better conformity of the electorate's political preferences with those of the elected representatives. We study these issues in the context of reorganization of states in India. Madhya Pradesh, the biggest state in India before the reorganization, was subdivided into Madhya Pradesh and Chhattisgarh in 2000, the latter accounting for less than one-fourth of the electorate of undivided Madhya Pradesh. Using socio-economic composition and traditional voting patterns, we argue that there were differences in political preferences between Madhya Pradesh and Chhattisgarh. However, in electoral democracies, the amount of transfers that a constituency gets depends crucially on whether the local representative belongs to the ruling party. Under these circumstances, we show in a theoretical context that when they are part of the same state, the smaller region would vote strategically to elect representatives with preferences more closely aligned to those of the the bigger region. Once they constitute a separate state however, this motive would no longer operate. Exploiting detailed data on state elections in Madhya Pradesh and Chhattisgarh in 1993, 1998 and 2003 and a difference-in-differences estimation strategy, we show that these predictions are validated empirically—there is a significant divergence in voting behavior between the two regions in 2003 unlike that in the pre-reorganization period. We conclude that redrawing of political boundaries can indeed bring forth substantial gains.

Keywords: Political boundaries, Voting, Redistribution

---

\*Kennedy School of Government, Harvard University, Cambridge, MA 02138, email: rchakra@ksg.harvard.edu

<sup>†</sup>Department of Economics, Princeton University, Princeton, NJ 08544, email: jroy@princeton.edu

## **Section I: Introduction**

In the last few years a growing literature in political economy has focused on issues relating to the number and size of nations and their decision to remain together or secede. In large part this has been motivated by events of the last two decades, when several big countries like the former Soviet Union and Yugoslavia disintegrated, and regional separatist tendencies flared up in a wide range of other countries.<sup>1</sup> The standard argument is that in deciding where to draw the political boundaries, residents trade off the advantage of a larger state in providing public services at a lower cost against the disadvantage of increased heterogeneity of preferences that is present in a larger entity. In other words, when contemplating a move towards separation (or integration), electors weigh the efficiency benefits of being part of a larger state (and a larger market) against the benefits to be had from having a government that is more closely aligned to the preferences of the people of this region.

In its monsoon session in 2000 the Parliament of India passed the Madhya Pradesh Reorganization Bill, the Uttar Pradesh Reorganization Bill and the Bihar Reorganization Bill. As a result one smaller state was carved out of each of these three biggest states in India – Chhattisgarh from Madhya Pradesh, Uttaranchal from Uttar Pradesh and Jharkhand from Bihar. In this paper, we investigate both theoretically and empirically, whether this reorganization led to changes in voting patterns in the affected regions. For reasons discussed below we concentrate on

---

<sup>1</sup> The list includes, but is not limited to, Canada in North America, Spain, Belgium, France, Italy and UK in Europe, India, Indonesia, China and Turkey in Asia, and New Zealand in Australasia.

Madhya Pradesh, which was the biggest state in India before its eastern part became a separate state called Chhattisgarh in November 2000.

Demands for new states have been a persistent feature of the political landscape in India. Soon after independence, the parliament passed the States Reorganization Act (November 1956) which redrew the boundaries of states on a linguistic basis.<sup>2</sup> This was followed by other reorganizations in the 1960s, most importantly, the breakup of Punjab into separate states of Punjab and Haryana. Since the latter half of the 1980's demands for separate states have been raised with increasing frequency, together with demands by other segments of the population for separate 'homelands' or independence. But since the sixties, any actual bifurcation of states did not take place until November 2000 when as mentioned, Chhattisgarh, Uttaranchal and Jharkhand came into existence as separate states. One interesting point to note here is that this reorganization was supported by all parties, in particular, the demand for separate states was supported by both the two major parties, Indian National Congress (INC) and Bharatiya Janata Party (BJP). The argument for separate states was most often based on differences in heritage and socio-cultural distribution.

Alesina and Spolaore (1997) study the determination of the number of countries in different political regimes, and in different economic environments. They find that democratization leads to secession and to an inefficiently high number of countries,

---

<sup>2</sup> The boundaries of provinces in pre-1947 India were not drawn on the basis of language, religion or culture, so that most of the provinces were multi-lingual and multi-cultural.

while economic integration increases the incentive for political separation. Bolton and Roland (1997) emphasize political conflicts over redistribution policies. They argue that a breakup is more likely when regions differ in their income distributions, and the efficiency gains from unification are small. Unlike in Alesina and Spolaore, region boundaries are assumed exogenous in Bolton and Roland, an assumption also maintained by Goyal and Staal (forthcoming). Goyal and Staal find that unification takes place between similar sized regions, and that majority voting leads to excessive separation from a majority point of view, just like in Alesina and Spolaore.<sup>3</sup> Alesina, Baqir and Hoxby investigate how the number and size of local political jurisdictions are determined. Using data on American school districts, they find evidence of tradeoff between economies of scale and racial heterogeneity, but little evidence in favor of the tradeoff between economies of scale and income heterogeneity.

In the Indian context, Kumar (2002) argues that the presence of linguistic compatibility, cultural homogeneity and some visible mass support justify the creation of new smaller states. He argues that, while not being a panacea to the ills afflicting a region, this can go a long way in solving specific problems of regional discrimination and unequal access to state power. He puts forth the success story of literacy in a small state like Himachal Pradesh as an example, and also believes that but for its secession in the mid-'60s, "Haryana would still have remained a neglected underdeveloped Hindi-speaking area within the state of Punjab." On the other hand, Sharma (2003) believes that giving in to such demands for new states will only fan

---

<sup>3</sup> For good in-depth reviews of this literature, see Alesina, Perotti and Spolaore (1995), Bolton, Roland and Spolaore (1996) or Alesina and Spolaore (2003).

regional and linguistic fanaticism. He argues that in a diverse country like India national integration becomes difficult when each different cultural, social and lingual group is living as a ‘compact group in a separate region’.

This study seeks to investigate whether a break-up of states leads to gains in terms of better representation of the electorate’s preferences in the composition of the government. Although there are quite a few studies that analyze the tradeoff between economies of scale and homogeneity of preferences and the formation of nations on that basis, there is no study thus far that seeks to empirically quantify the gains that can be had from a break-up of nations. It is also the first paper to use political preferences and changes in relative voting patterns after a break-up to investigate and assess the extent of gains.

Drawing evidence from the socio-economic composition of Chhattisgarh and Madhya Pradesh and traditional voting patterns of different cultures, groups and regions, we argue that political preferences were different in the two regions. Next, in a theoretical context, we show that the divergence in preferences would lead to very different voting patterns of Chhattisgarh before and after reorganization. In electoral democracies, the amount of transfers that a constituency<sup>4</sup> gets depends crucially on whether the local representative belongs to the ruling party. Also, the people in India, particularly the minorities and other caste-based groups are often believed to vote

---

<sup>4</sup> In India, a state legislature is known as a legislative assembly, and state legislative districts are referred to as assembly constituencies. In what follows we shall use the word constituency and seat interchangeably to refer to a legislative district.

strategically. Under these circumstances, we argue that when they were part of undivided Madhya Pradesh, the residents of Chhattisgarh would vote strategically to elect representatives with preferences more closely aligned to those of the residents of Madhya Pradesh proper. Once they constitute a separate state however, this motive would no longer operate. We exploit detailed data on elections to the undivided Madhya Pradesh legislature in 1993 and 1998 together with data on elections to the (post-reorganization) Madhya Pradesh and Chhattisgarh legislatures in 2003 to analyze the regional voting trends pre and post-reorganization. Our difference-in-differences estimates show that voting patterns of Madhya Pradesh and Chhattisgarh were surprisingly similar before the reorganization, while they were strikingly different after.

The rest of the paper is organized as follows. In section II we discuss the rationale for focusing on Madhya Pradesh and Chhattisgarh, rather than the other states which also underwent a reorganization. Section III argues that due to various reasons, the political preferences of Madhya Pradesh and Chattisgarh would be different. In Section IV we set up a simple theoretical model to analyze voting behavior of states before and after secession. Section V discusses the data and the estimation strategy. Section VI presents the empirical results and performs further robustness checks. Section VII concludes.

## **Section II: Why Madhya Pradesh and Chhattisgarh?**

There are three main reasons why we have chosen this particular pair of states among the three. First, the boundaries of each constituency remained the same following the reorganization, whether they remained within Madhya Pradesh or formed part of Chhattisgarh. There were 320 assembly constituencies in undivided Madhya Pradesh, after the breakup 90 of them fell in the new state (Chhattisgarh), the other 230 comprised the new Madhya Pradesh legislative assembly. This enables us to compare the voting patterns of the constituencies in the two states across pre- and post-reorganization state elections. In the partition of Bihar too, constituency boundaries were left unchanged. However, this was not the case for Uttar Pradesh. Since Uttaranchal was carved out of a relatively small part of the state, the existing 22 constituencies were subdivided into 70 smaller assembly seats.<sup>5</sup>

Second, there have been elections to the state legislature in undivided Madhya Pradesh in 1998, and to the legislatures in Madhya Pradesh and Chhattisgarh in 2003. Since these straddle 2000, the year in which the reorganization took place, we can pursue a difference-in-differences estimation strategy and compare the voting patterns of Chhattisgarh residents pre and post breakup. There has not been any election to the state legislatures in Bihar or Jharkhand after their reorganization. There have been

---

<sup>5</sup> This problem arises because we would ideally like to compare within-constituency changes in voter preferences across two elections. With changes in constituency boundaries, the true effect of any shift in voter preferences will be confounded with changes in composition of the constituencies.

such elections in Uttar Pradesh and Uttaranchal in February 2002, but as mentioned above, changes in constituency boundaries in the latter state preclude such an estimation strategy.

Third, unlike most other states in India, the political system in Madhya Pradesh and Chhattisgarh revolves around two major national parties, the Bharatiya Janata Party (BJP from now on) and the Indian National Congress (INC). Typically these parties together account for more than 80% of the votes polled in these states, and over 90% of the assembly seats.<sup>6</sup> The only other important parties in the two states are Bahujan Samaj Party (BSP) and the Samajwadi Party (SP). However, even apart from the fact that the support for these parties is low and concentrated in particular pockets,<sup>7</sup> there do not seem to have been any major changes in this support for them.<sup>8</sup> In most other states in India, third parties (together with smaller regional parties) often have a considerable amount of leverage. This can become a problem because parties often enter into electoral alliances just before the elections – if the composition of the alliance changes from one election to the other it would be difficult to extricate the change in support for a particular party from that for other parties in the alliance. For example, in Uttar Pradesh the four largest parties - BJP, SP, BSP and INC – often

---

<sup>6</sup> In the elections to the (undivided) Madhya Pradesh state legislature in 1998, the BJP and the INC together got 79.87% of the votes. In terms of actual seats, the two parties together won 91% (291 out of 320). In 2003 elections, the two parties secured 211 out of the 230 seats in Madhya Pradesh, and 87 out of the 90 seats in Chhattisgarh. See Table 3 for details.

<sup>7</sup> For example, the BSP draws most of its support from the region in northern Madhya Pradesh called Vindhya Pradesh, which borders Uttar Pradesh, its main political base.

<sup>8</sup> Since we follow a difference-in-differences estimation strategy, a change in support for these parties would bias our results only if this support changed differentially across the two states. This does not seem to have been the case.



enter into alliances with each other and other smaller regional parties that make it difficult to ascertain the true change in support for one particular party or ideology.

### **Section III: Heterogeneity of Preferences across Madhya Pradesh and Chhattisgarh**

We argue that political preferences, particularly as it relates to voting for each of the two major parties, are different across these two states. Table 1 shows some summary statistics for Madhya Pradesh and Chhattisgarh.<sup>9</sup> In terms of population, Chhattisgarh is about one-third the size of post-reorganization Madhya Pradesh. It is more rural and has a higher proportion of females. It also ranks higher than Madhya Pradesh in most of the demographic indicators, having a lower birth rate, death rate, growth rate and infant mortality rate. Another important demographic feature is the presence of a large tribal population in Chhattisgarh, as compared to Madhya Pradesh.<sup>10</sup> Though the proportions of Scheduled Castes are similar between the two states, the proportion of Scheduled Tribes in the former is more than double that in the latter. We argue below that these demographics have important consequences for preferring one party over the other at the hustings.

Tables 2(a), (b) and (c) show the support for the BJP and the INC across different segments of the population. In the Indian context, the BJP is seen to be the right-wing

---

<sup>9</sup> For ease of comparison we show the relevant all-India numbers in the last column.

<sup>10</sup> We proxy this by the number of assembly constituencies reserved for candidates belonging to these groups. This should be closely correlated with the actual proportions of these groups in the population, and should give us a good idea of their respective political clout.

party, with a strong focus on traditional upper caste Hindu way of life, while the INC is considered to be a left-of-center socialist-leaning party. Table 2(a) shows that the support for BJP vis-à-vis the INC increases almost dramatically as one moves from the lower-ranking backward castes to the higher ones.<sup>11</sup> Among the SCs and the STs, the two most disadvantaged sections of the Indian population, a majority support the INC. At the other end of the spectrum however, among the Kayasthas less than one-third support the INC, and among the Brahmins the support for this party is only about a fourth. Table 2(b) shows that there are differences in support for these two parties across gender too. For males, a clear majority is seen to prefer the BJP while females are virtually tied.<sup>12</sup>

Table 2(c), which is taken from an earlier survey done by the same group, shows basically the same trends, though now the absolute level of support for the INC is somewhat stronger. The parties are virtually in a dead heat in general, but the level of support differs significantly across the various groups. Once again, the upper castes

---

<sup>11</sup> The figures refer to all-India, and are not available for individual states or regions. However, it is widely believed that these trends are broadly true in individual states. Consider e.g. the results of a survey conducted in Kerala, a state in southern India, by the Center for the Study of Developing Societies. In Kerala the two most important political groups are the communist-led Left Democratic Front and the INC-led United Democratic Front (UDF), with BJP coming in third. Among the higher castes like the Nairs and the Ezhavas, the BJP has strong support in spite of its third position in the entire state – in fact, 31% of Nairs support the BJP, compared to 29% for the UDF. This is a large difference taking into account the fact that the UDF was one of the two major parties and BJP has a considerably smaller role in Kerala. Among the lower castes (dalits and the adivasis), the UDF has greater support. The gender divide is also sharp – for males the support for INC and BJP is at 39% and 13% respectively, compared to 52% and 7% for the females. See Gopa Kumar (1999).

<sup>12</sup> For Muslims, which comprise more than 10% of the Indian electorate and are considered crucial for success in many individual constituencies, the support for BJP is particularly low.

prefer BJP and the lower castes INC. One interesting finding is that in the rural areas the INC is preferred to the BJP, and vice versa.

Looking back at Table 1, it seems reasonable to argue that the relative support for the INC would be higher in Chhattisgarh, and vice versa. First, Chhattisgarh has a higher share of females in the population, as well as a higher sex-ratio (female-to-male ratio). Second, Chhattisgarh is less urban than Madhya Pradesh. Third, and perhaps most important, Chhattisgarh has a very high share of STs in the population. SCs and STs together account for almost half the population of Chhattisgarh. In Madhya Pradesh, this figure is less than one-fourth. The popularity that the INC enjoys among women, rural people and the poor classes, as seen in Tables 2(a), 2(b) and 2(c), should make political preferences in Madhya Pradesh and Chhattisgarh quite different.

#### **Section IV: Theoretical Framework**

We set up a theoretical model to analyze the voting behavior of a region before and after secession from a parent state. Two regions  $A$  and  $B$  initially form part of a single state. Each of the regions  $A$  and  $B$  consists of multiple constituencies. After the break-up, the state splits into two independent and separate states:  $A$  and  $B$ .

There are two parties  $X$  and  $Y$ . The party that wins the majority of seats or constituencies in a state wins in that state. One of the regions, say  $A$ , is considerably bigger than the other in terms of the size of the electorate and the number of

constituencies. Before the break-up, the party that enjoys majority support in the larger region A, enjoys majority support in the entire state. Assume party  $X$  enjoys majority support in A.

Preferences of individuals within a constituency are assumed to be homogenous, but differ across constituencies.<sup>13</sup> Preferences of a constituency (or individuals within a constituency) are given by  $U_{ij}^k = I_{ij}^k + u(t_{ij}^k)$ .  $U_{ij}^k$  denotes the utility that constituency  $i$  in region  $k$  gets if party  $j$  wins in  $i$ .  $I_{ij}^k \in [0,1]$  is an ideological parameter denoting the utility that constituency  $i$  in region  $k$ ,  $k = \{A, B\}$  gets by electing a representative from party  $j$ ,  $j = \{X, Y\}$ .

Define  $\sigma_i^k = I_{iX}^k - I_{iY}^k$ .  $\sigma_i^k$  denotes the ideological bias of constituency  $i$  in region  $k$  toward party  $X$ . A positive value of  $\sigma_i^k$  implies that constituency  $i$  has a bias in favor of party  $X$  and vice-versa.  $\sigma_i^k$  is distributed in the interval  $[-1,1]$  with density function  $f_k(\sigma_i)$  and distribution function  $F_k(\sigma_i)$ . The distribution of  $\sigma_i$  differs across regions A and B. Regions A and B prefer opposing parties. If there was sincere voting, party X would gain majority in A and party Y in B. The distribution of  $\sigma_i$  in region A first order stochastically dominates that in B. The median of  $\sigma_i$  in region A exceeds zero while that in B is less than zero.

The transfer that constituency  $i$  receives in region  $k$  if party  $j$  is elected in  $i$  is denoted by  $t_{ij}^k$ . We assume that redistribution is along party lines. The amount of transfers that a

---

<sup>13</sup> This assumption is made for simplicity. All results hold if preferences of individuals within a constituency are heterogeneous.

constituency in region  $k$  gets depends on whether the local representative belongs to the ruling party ( $X$ ) at the state level. Specifically,  $t_{iX}^k > t_{iY}^k$ , where  $t_{iX}^k$  ( $t_{iY}^k$ ) denotes the transfer that constituency  $i$  gets if it elects a candidate from the ruling (losing) party  $X$  ( $Y$ ). For simplicity, we assume  $t_{iX}^k = t_X$  and  $t_{iY}^k = t_Y$ . These transfers are financed by taxes that are equally paid by all constituencies. The utility function  $u(\cdot)$  is assumed to be increasing and strictly concave in its argument. The preferences of all constituencies are perfectly observable and we allow for strategic voting.

Now consider the voting behavior of the constituencies in region  $B$  before the break-up. The constituencies observe voting preferences in region  $A$  and correctly anticipate the winner in  $A$ . Consider constituency  $i$  in region  $B$ . If  $I_{iX}^B > I_{iY}^B$ , constituency  $i$  elects a representative from party  $X$ . If  $I_{iX}^B < I_{iY}^B$ , electing a representative from party  $X$  yields utility  $U_{iX}^B = I_{iX}^B + u(t_X)$ . On the other hand, electing a representative from party  $Y$  yields utility  $U_{iY}^B = I_{iY}^B + u(t_Y)$ . Therefore, constituency  $i$  elects a representative from party  $X$  if and only if :

$$\begin{aligned}
 I_{iX}^B + u(t_X) &> I_{iY}^B + u(t_Y) \\
 \Rightarrow I_{iX}^B - I_{iY}^B &> u(t_Y) - u(t_X) \\
 \Rightarrow \sigma_i^B &> u(t_Y) - u(t_X)
 \end{aligned}$$

Note that  $u(t_Y) - u(t_X) < 0$ .<sup>14</sup> There exists a cutoff  $\sigma^* \in [-1, 0)$ ,  $\sigma^* = u(t_Y) - u(t_X)$  such that all constituencies with  $\sigma_i > \sigma^*$  in region  $B$  elect a candidate from party  $X$  and all constituencies with  $\sigma_i < \sigma^*$  elect a candidate from party  $Y$ . The key insight is that

---

<sup>14</sup> We assume that the  $u(\cdot)$  function, tax and transfers are such that  $u(t_x) - u(t_y) < 1$ .

because redistribution is party-specific, residents in some of the constituencies in the smaller region  $B$  will vote strategically to elect representatives with preferences more closely aligned to those of residents in region  $A$ . For these constituencies, there will be a utility loss in electing representatives with preferences less closely aligned to their own, but this will be swamped by the utility gain from having a large transfer.<sup>15</sup>

After the break-up, the party that enjoys majority support in  $B$  ( $Y$ ) wins in region  $B$ . Strategic voting implies that constituencies with positive  $\sigma_i$  sufficiently close to zero elect representatives from party  $Y$ . Therefore, prior to the break-up, voting pattern in region  $B$  will resemble that in  $A$ , while voting pattern after the break-up is likely to be comparatively disparate between the two regions. The representatives elected to the state legislature will then conform more closely to the inherent (ideological) preferences of region  $B$ .<sup>16</sup> Thus, in the presence of divergent preferences between regions, a break-up leads to a welfare gain in the smaller region.<sup>17</sup>

**Proposition** *Under divergent preferences, party specific transfers and strategic voting, voting distribution of the smaller region mimics that of the parent state. Secession from the parent state yields comparatively disparate voting patterns.*

Next, we investigate the voting behavior of region  $B$  before and after secession from  $A$  under an alternative formulation of transfers. Transfers are now assumed to be targeted to a region as a whole ( $A$  or  $B$ ) instead of a constituency. Examples of such transfers are constructing a highway through region  $B$ , building an industry in region  $B$  etc., while

---

<sup>15</sup> Note that some constituencies in  $A$  with  $\sigma_i$  below zero but sufficiently close to zero would find it profitable to elect a candidate from party  $A$  for the same reason.

<sup>16</sup> The party preferred by the median constituency will now prevail in region  $B$ .

<sup>17</sup> Note that secession does not affect the voting pattern of constituencies in region  $A$ . Constituencies that elected representatives from their less preferred party still continue to do so after the break-up.

transfers in the previous formulation can be thought of as local public goods such as building tube-wells, paving a local road etc. The transfers obtained by a region depend on the proportion of its representatives belonging to the ruling party. Transfers are still financed equally by all constituencies. Specifically, if  $T$  represents the total taxes collected by the state,  $w_A$  and  $w_B$  the number of ruling party representatives in regions A and B respectively, then transfers to region A ( $t_A$ ) and that to region B ( $t_B$ ) are respectively represented by:

$$t_A = \frac{w_A}{w_A + w_B} T$$

$$t_B = \frac{w_B}{w_A + w_B} T$$

The crucial difference with the previous formulation is that a change in voting behavior of a certain constituency affects not only transfers and utility of that constituency but also those of the other constituencies. The utility of a constituency  $i$  in region  $k$  from electing a representative from party  $j$  is given by  $U_{ij}^k = I_{ij}^k + u(t^k)$ . Assume that the number of constituencies in regions A and B are given by  $\#A$  and  $\#B$ .

Consider the voting pattern in region B before the break-up. A constituency that is ideologically biased in favor of X elects a candidate from party X. A constituency that ideologically identifies itself with party Y correctly anticipates voting behavior in all other constituencies and elects a candidate from party X if and only if:

$$I_{iX}^B + u\left(\frac{w_B}{w_A + w_B} T\right) > I_{iY}^B + u\left(\frac{w_B - 1}{w_A + w_B - 1} T\right)$$

$$\Rightarrow I_{iX}^B - I_{iY}^B > -\left[u\left(\frac{w_B}{w_A + w_B} T\right) - u\left(\frac{w_B - 1}{w_A + w_B - 1} T\right)\right]$$

$$\Rightarrow \sigma_i^B > -\left[u\left(\frac{w_B}{w_A + w_B}T\right) - u\left(\frac{w_B - 1}{w_A + w_B - 1}T\right)\right] = \sigma_1^B(w_B, \cdot)$$

At equilibrium,  $w_B = \#B[1 - F_B(\sigma_1^B(w_B, \cdot))]$ , which endogenously determines equilibrium

$w_B^*$  ( $w_B^*$ ). There exists a cutoff  $\sigma_B^* \in [-1, 0)$ ,

$$\sigma_B^* = \left[u\left(\frac{w_B^* - 1}{w_A^* + w_B^* - 1}T\right) - u\left(\frac{w_B^*}{w_A^* + w_B^*}T\right)\right], \text{ where } w_A^* \text{ denotes the equilibrium } w_A,$$

such that all constituencies with  $\sigma_i^B > \sigma_B^*$  elect a candidate from party  $W$  while all constituencies with  $\sigma_i^B < \sigma_B^*$  from party  $L$ . The basic message is that when constituencies care about their ideological preferences as well as material gains, constituencies that are ideologically biased against the winning party (but are not too far away from the ideologically neutral constituency) will sacrifice their ideological biases in favor of material gains and vote for the winning party.

In region  $A$  constituencies that prefer party  $W$  vote for  $W$ . Constituencies ideologically biased in favor of  $L$  vote for  $W$  if and only if :

$$\sigma_i^A > -\left[u\left(\frac{w_A}{w_A + w_B}T\right) - u\left(\frac{w_A - 1}{w_A + w_B - 1}T\right)\right] = \sigma_1^A(w_A, \cdot)$$

At equilibrium,  $w_A = \#A[1 - F_A(\sigma_1^A(w_A, \cdot))]$  which endogenously determines equilibrium

$w_A^*$  ( $w_A^*$ ). There exists a cutoff  $\sigma_A^* \in [-1, 0)$ , such that all constituencies with  $\sigma_i^A > \sigma_A^*$

elect a candidate from party  $W$  while all constituencies with  $\sigma_i^A < \sigma_A^*$  from party  $L$ ,

$$\text{where } \sigma_A^* = \left[u\left(\frac{w_A^* - 1}{w_A^* + w_B^* - 1}T\right) - u\left(\frac{w_A^*}{w_A^* + w_B^*}T\right)\right].$$



Since  $\frac{w_B^*}{w_A^* + w_B^*} - \frac{w_B^* - 1}{w_A^* + w_B^* - 1} > \frac{w_A^*}{w_A^* + w_B^*} - \frac{w_A^* - 1}{w_A^* + w_B^* - 1}$  and  $u(\cdot)$  is concave, it

follows that  $\sigma_B^* < \sigma_A^*$ . Therefore, in the smaller region  $B$ , constituencies in a larger range of  $\sigma_i$  ( $[\sigma_B^*, 0)$ ) choose to switch in favor of the party they are ideologically biased against as compared to region  $A$  ( $[\sigma_A^*, 0)$ ). The intuition here is as follows. Since proportion of transfers is smaller in  $B$ , switching one vote in favor of  $X$  in  $B$  increases the proportion and hence the actual transfers by more than that in region  $A$ . In other words, region  $A$  constituting of a larger number of constituencies is more likely to be subject to the free-rider problem and will be reluctant to switch in favor of their ideologically less preferred party. After the break-up, party  $L$  will win in region  $B$ . The transfers financed by region  $B$  are now targeted to the entire region  $B$ . The previous motive for strategically voting for their non-preferred party no longer operates---all constituencies now vote sincerely according to their inherent preferences.

This formulation of transfers once again confirms that prior to the break-up, voting pattern of the smaller region conforms closely to that in the parent state while secession leads to comparatively divergent voting patterns between the regions. Thus secession leads to gains in that it leads to a closer alignment of the preferences of the electorate with that of the elected representatives.

## **Section V: Data and Empirical Strategy**

### **Data**

Most of the data used in this paper come from the Election Commission of India, which maintains a detailed database of election statistics for each state. For the most

part we use results for the 1998 assembly elections in undivided Madhya Pradesh, and the 2003 elections in Madhya Pradesh and Chhattisgarh. In the section on robustness checks we also use the data for the 1993 assembly elections. The data reported in Table 1 come primarily from the 2001 Census of India. The data in Table 2 come from various surveys conducted over the years, as reported in the sources mentioned.

### **Empirical Strategy**

Table 3 shows the performance of BJP and INC in the 1998 and 2003 state elections. For the 1998 elections, when they formed part of the same state, we show the number of seats won by INC and BJP in Chhattisgarh and Madhya Pradesh separately. The INC had a comfortable majority in 1998, but was defeated by the BJP in either state in 2003.

The interesting thing to note is that in 1998 the performances of BJP and INC are very similar across the two regions of the state. For example, the BJP won 38.84% of the votes in Madhya Pradesh and 39.11% in Chhattisgarh. The respective numbers for the INC are 41.21% and 41.01%. The percentage of seats won by the two parties was also very similar across the two regions. In the 2003 elections, however, there was a clear divergence – while the BJP swept to power in either state, the INC did much better, in a relative sense, in Chhattisgarh. In 1998 the BJP-INC differential in the percentage of votes won was -2.37% in Madhya Pradesh and -1.90% in Chhattisgarh, with a net differential of about -0.47%. In 2003 the respective differentials in the two

states are 10.90% and 2.55%, with a net differential of about 8.35%. The difference is also very large for the percentage of seats won – the net differentials, similarly defined, are -4.5% in 1998 and 44.3% in 2003. This seems to suggest a change in relative voting patterns in these two regions after reorganization. In what follows we pursue this further by looking at the results for all the 320 assembly constituencies.

We want to compare the relative voting trends in the two regions pre and post reorganization. We run the following regression, separately for each party, BJP and INC using data from state legislative elections in 1998 and 2003.

$$Y_{ist} = \alpha + \beta_0 * D_{CH} + \gamma_0 * Yr\ 2003 + \theta_0 * (D_{CH} * Yr\ 2003) + \varepsilon_{ist} \dots \quad (1)$$

Here  $Y_{ist}$  is some measure of electoral performance of the party in constituency  $i$  in state (or region)  $s$  in year  $t$ .  $D_{CH}$  is a dummy variable taking the value of 1 if the constituency forms part of Chhattisgarh, 0 otherwise.  $Yr\ 2003$  is similarly a dummy variable for 2003. We are interested in the estimate of  $\theta_0$ , which can be interpreted in this context as a sort of a difference-in-difference estimate for voting behavior.

We use three different indicators of electoral performance – whether the seat in question was won by the respective party, the number of votes obtained by the party in this constituency, and the percentage of votes polled by the party in this constituency. We name the variables  $bjpwin$ ,  $bjpvote$  and  $bjppcvote$ , and  $congwin$ ,  $congvote$  and  $congpcvote$  respectively for BJP and INC. We estimate equation (1) by simple OLS. We also estimate the corresponding fixed effects regressions, where we

compare the within-constituency changes across the years. For `bjpwin` and `congwin` (which are 0-1 dummies), we also run probit regressions. All standard errors reported are robust to heteroscedasticity. Apart from these trends, we also look at the trends in voter turnout to investigate whether the possibility of a more effective exercising of franchise of Chhattisgarh residents in 2003 increases their turnout.

We check for the robustness of our results in various ways. First, a potential concern is that part of any change in voting pattern that we may observe in 2003 is due to changes in voter turnout rather than actual change in voting behavior. To investigate this issue, we run the alternative regressions for the latter three variables for each party (`bjpwin`, `bjpvote` and `bjppcvote`, `congwin`, `congvote` and `congpvote`) after controlling for voter turnout. Second, we report standard errors which allow for arbitrary within-district correlations.<sup>18</sup> Third, we drop the constituencies where neither the BJP nor the INC emerged as either the winner or the runner-up. Since there were only 9 such constituencies out of a total of 640 (1993 and 1998 elections taken together), these constituencies might be considered as outliers.

As a final check on the validity of the results, we include data for the 1993 assembly elections. The motivation behind this is as follows. If we find that the voting pattern of Chhattisgarh is similar to that of Madhya Pradesh in 1998, it may be caused by a year-specific effect, rather than by the Chhattisgarh residents voting strategically to

---

<sup>18</sup> A district is an administrative unit in India, similar to counties in the U.K. and U.S. There are 45 districts in Madhya Pradesh and 16 in Chhattisgarh. So the average district has about 5 constituencies in the former and 5.5 in the latter.

mimic Madhya Pradesh voting behavior. If strategic voting is the cause, then the resemblance in voting behavior should be a characteristic of other pre-reorganization years also, for example 1993. We run the following regression

$$Y_{ist} = \alpha + \beta_0 * D_{CH} + \gamma_0 * Yr\ 1998 + \theta_0 * (D_{CH} * Yr\ 1998) \\ + \gamma_1 * Yr\ 2003 + \theta_1 * (D_{CH} * Yr\ 2003) + \varepsilon_{ist} \dots \quad (2)$$

As earlier,  $Y_{ist}$  is a measure of electoral performance of the party in constituency  $i$  in state (or region)  $s$  in year  $t$ .  $D_{CH}$  is a dummy variable taking the value of 1 if the constituency forms part of Chhattisgarh, 0 otherwise.  $Yr\ 1998$  and  $Yr\ 2003$  are dummy variables for 1998 and 2003 respectively. We are interested in the estimates of  $\theta_0$  and  $\theta_1$ , which can be interpreted as difference-in-differences estimates of voting behavior.

## **Section VI: Results**

First, we look at the trends in voter turnout in the two elections. Table 4 shows the results from running equation (1) on the proportion of total electors who voted in these elections. In the 1998 elections there were not any perceptible differences in turnout across constituencies in Chhattisgarh and Madhya Pradesh. In the 2003 elections, turnout increased by a large margin in Madhya Pradesh, and interestingly, by an even larger margin in Chhattisgarh.

It is often argued that decentralization brings political power closer to the masses, and in turn leads to a larger interest in political affairs. This may explain part of the increase in turnout in Chhattisgarh in 2003. When Chhattisgarh was part of Madhya Pradesh, due to the divergence in preferences, some Chhattisgarh residents may not have found it worthwhile to exercise their franchise.<sup>19</sup>

Table 5 shows the results from running equation (1) on *bjpwin* (the first four columns), *bjpvote* (next four) and *bjppcvote* (final four columns). Even-numbered columns are weighted by the total number of electors in a constituency. For *bjpwin* we show the results for probit and FE regressions; the results for OLS are very similar. For the others we show both OLS and FE results.

We begin with the results for *bjpwin*. These show that in 1998 there was no difference in support for the BJP across Chhattisgarh and Madhya Pradesh. In 2003 the BJP did much better. In India there is a strong anti-incumbency factor in most elections – the ruling parties are overthrown by large margins at the hustings, often only to bounce back to power at the next election. Some such force was probably at work here, since the INC had been in power. Interestingly, however, the gains for BJP were not equally spread across the two states. In Madhya Pradesh the party did spectacularly well, with the probability of winning a seat going up by almost 40%. The gains were much more modest in Chhattisgarh, where the increase was about 15% or even less.

---

<sup>19</sup> Note that it is not very likely that the increase in turnout is due to better weather, better security arrangements etc., for these reasons cannot explain the differential and much higher increase in Chhattisgarh.

The results for *bjpvote* and *bjppcvote* mirror the same pattern. For example, in 2003 the BJP's share of votes in an average constituency went up by about 3.5% in Madhya Pradesh, a quite large margin. In Chhattisgarh however the increase was generally less than 0.5%. In terms of actual votes obtained in each constituency, the results are similar and statistically significant in the FE regressions.<sup>20</sup>

Table 6 shows the results for the INC. Note first that like for BJP, there is no evidence of any difference in electoral support for INC across Chhattisgarh and Madhya Pradesh in 1998. For *congwin* and *congpvote*, as expected, the effects mirror those seen in Table 5. The Congress suffered a comprehensive defeat at the hands of the BJP in Madhya Pradesh, with its probability of winning a seat declining by as much as 39% compared to 1998. In Chhattisgarh the decline was much muted, falling by only about 8-12%. Similarly, the decline in the percentage of votes polled by INC in an average seat in Chhattisgarh was only about one-half of that in Madhya Pradesh. The picture is similar for *congvote*,--- the increase in the number of votes polled was much bigger in the former than in the latter.

### **Robustness Checks**

We now provide evidence that these results are reasonably robust. First, the empirical analysis above reveals that the voter turnout increased in 2003 and especially in

---

<sup>20</sup> A large part of the Yr 2003 effect on number of votes polled is presumably due to population growth, and not due to a switch in party preference.

Chhattisgarh. To ascertain that the divergence of voting behavior is not a mere artifact of increased voter turnout, we run the regressions for the party specific outcome variables after controlling for voter turnout. Second, since a district consists of many constituencies, there may be local factors that influence voting across neighboring constituencies. Not controlling for these within district correlations might bias the conclusions, particularly in finding significant effects when none exists. Third, we drop the nine constituencies where neither BJP nor INC emerged as either the winner or the runner-up. This is motivated by the fact that these constituencies may in some sense be outliers, given how few their number is (1.4%). Also since neither BJP nor INC occupied the first two places, their inclusion may bias the estimates. Finally, we estimate equation (2) using data from 1993, 1998 and 2003 state legislative elections to confirm that the resemblance of voting behavior in 1998 is not unique to that year (that is, not a year-specific effect).

Tables 7 and 8 present results for the first three checks for the electoral performances of BJP and INC respectively. All regressions are weighted by the number of electors. For brevity, we only report estimates from OLS regressions. The results from the corresponding fixed effects estimates are very similar.

For each comparison, columns (1), (5) and (9) of Table 7 reports results from OLS estimates without controlling for within district correlations. Columns (5) and (9) are identical to columns (6) and (10) respectively of Table 5. In column (2) we introduce the proportion of electors in a constituency who exercised their franchise as an



independent variable. This is statistically significant, implying that a 5% increase in polling in a constituency would lead to about a 5% decrease in the probability of BJP winning the seat. It also slightly reduces the coefficient on the Chhattisgarh-Yr 2003 interaction term, implying that part of the (relatively) worse performance of BJP in Chhattisgarh is due to a higher turnout in that state. However, the coefficient on the interaction term remains large and statistically significant even after controlling for voter turnout.

In column (3) we use standard errors that take account of within district correlations. Although this increases the standard errors on the Chhattisgarh-Yr 2003 interaction term, it still remains significant at 5%. In column (4), we drop the outlying observations, but the results remain very similar.

The results for *bjpvote* and *bjppcvote* once again strongly confirm the robustness of the results. Voter turnout itself is statistically insignificant in each of these columns, and it changes the coefficients on the other variables only marginally. Unlike for *bjpwin*, allowing for within-district correlation decreases the standard errors on the interaction term, so that it becomes significant at 10% in the regression for *bjppcvote*. The results remain similar upon excluding the outlying observations.

Table 8 shows the corresponding results for INC. As expected, these generally mirror the results for BJP seen earlier. A 5% increase in polling for example would lead to about a 5% *increase* in the probability of INC winning the seat. As above, it slightly

reduces the coefficient on the Chhattisgarh-Yr 2003 interaction term, implying that part of the (relatively) better performance of INC in Chhattisgarh is accounted for by a higher turnout in that state. However, the interaction term still remains significant at 5% level.

Unlike for BJP, voter turnout is significant in all the results for INC. There is a positive impetus for the number of votes polled, though part of the relationship here may be mechanical, since an increase in the percentage of voters who cast their ballots will increase the number of total votes polled, *ceteris paribus*. More interestingly, turnout has a large and positive effect on percentage of votes won by INC in a constituency. Like for congwin, this reduces the coefficient on the Chhattisgarh-Yr 2003 interaction term by a little bit but it still remains significant at 5% level. Allowing for within district correlations or restricting to a smaller sample (excluding outliers) virtually leaves the results the same.

To sum, controlling for factors like voter turnout across constituencies does not seem to affect the results substantially. The same is true when we control for within district correlations or omit the outlying observations. The exact results are slightly magnified or diluted but the overall picture is unchanged - there was a significant divergence in voting pattern in Chhattisgarh in the post-reorganization period.

Finally, to make sure that the results we get are not driven by effects specific or unique to 1998, Table 9 presents the results of running equation (2) on election data

from the 1993, 1998 and 2003 assembly elections. For brevity we only report the results for INC, the results for BJP are very similar. The first three columns show the results for congwin, the next three are for congvote and the final three for congpcvote. For each variable, we report both OLS and FE results. The OLS regressions in columns (2), (5) and (8) allow for within-district correlations.

For congwin, there does not seem to be any difference in voting patterns between Chhattisgarh and Madhya Pradesh, either in 1993 or in 1998. But in 2003, Chhattisgarh residents were much more in favor of INC than their counterparts in Madhya Pradesh. The same is true of the other variables as well. In neither case do we find any evidence of a divergence in voting behavior prior to 2003, though in that year the differences are large and significant.<sup>21</sup> We conclude that the change in voting patterns is unique to the 2003 assembly elections, and argue that it can largely be traced to the break-up that preceded it.

Two final comments are in order. The first is that the better performance of INC in Chhattisgarh was not due to its being ‘rewarded’ in some way by the voters for help in creation of the state. The issue of a separate state for Chhattisgarh has been supported by both the BJP and the INC<sup>22</sup> in the past, and there is no evidence that the voters favored either of the two parties on this issue

---

<sup>21</sup> We also ran alternative versions of these regressions where we controlled for voter turnout. The results are qualitatively similar and hence not reported here.

<sup>22</sup> See e.g. the report on Chhattisgarh by Rediff titled “Chhattisgarh Statehood is a Hot Political Issue” (November 23, 1998), available online at [www.rediff.com/news/1998/nov/23chatti.htm](http://www.rediff.com/news/1998/nov/23chatti.htm).

The final comment is about the role played by the smaller political parties. The support for most of the existing parties (SP, BSP, GGP, etc.) remained more or less same across the years. But there was a new party contesting the elections in 2003, called the Nationalist Congress Party (NCP), and it seemed to have higher support in Chhattisgarh than in Madhya Pradesh. However, the NCP in Chhattisgarh was really a breakaway faction of the INC, headed by a former party stalwart (V. C. Shukla) who was a rival to the incumbent Chief Minister Ajit Jogi. It is conceivable that most of the support for the NCP in this election came from those who would have supported INC otherwise.<sup>23</sup> Accounting for this would then make our results even stronger.

## **Section VII: Conclusions**

In this paper we focus on the reorganization of Indian states that took place in 2000 to investigate whether gains can be had from a redrawing of political boundaries. A recent strand of literature in political economy over the last decade has brought to the fore issues like the number and size of nations, setting up tractable frameworks in which to analyze these questions. However, to date there is no study that seeks to investigate the impact of a break-up of states on voting pattern and whether secession leads to a closer conformity between the preferences of the electorate and the elected representatives. This study addresses these important issues. In 2000, Madhya Pradesh, then the biggest state in India, was subdivided into two smaller states,

---

<sup>23</sup> Some commentators believe that this is what happened, see e.g. Sharma and Sharma (2003).

Madhya Pradesh and Chhatisgarh. We argue that political preferences were distributed differently in these two regions, and show in a theoretical context that although pre-organization period voting behavior of the smaller region will mimic that of the larger region, post-reorganization voting pattern will be different. We test this prediction using data on state elections in 1993, 1998 and 2003, which straddle 2000, the year of the breakup. We find that indeed in 2003 the voting pattern in Chhattisgarh was significantly different from that in Madhya Pradesh, even though in 1993 and 1998 both regions had voted very similarly. Several robustness checks confirm this basic finding. We conclude that there can be sizeable welfare gains from creation of new smaller states. In future research it would be interesting to see if such gains outweigh the efficiency losses from a separation, if any, and thereby justify the existence of smaller homogeneous political entities.

### **References:**

Alesina, Alberto, R. Baqir and C. Hoxby, "Political jurisdictions in heterogenous communities," *Journal of Political Economy*, forthcoming.

Alesina, A., R. Perotti and E. Spolaore, Together or Separately? Issues on the Costs and Benefits of Political and Fiscal Unions, *European Economic Review*, Volume 39 (3-4), April 1995.

Alesina, A. and E. Spolaore, On the Number and Size of Nations, The Quarterly Journal of Economics, Vol. 112, No. 4, November 1997.

Alesina, A. and E. Spolaore, The Size of Nations, MIT Press, Cambridge, Massachusetts, 2003.

Bolton, P. and G. Roland, The Breakup of Nations: A Political Economy Analysis, The Quarterly Journal of Economics, Vol. 112, No. 4, November 1997.

Bolton, P., G. Roland and E. Spolaore, Economic Theories of the Break-up and Integration of Nations, European Economic Review, Volume 40 (3-5), April 1996.

Government of India, Office of the Registrar General, 2001 Census of India, available on the web at <http://www.censusindia.net>.

Government of India, Election Commission of India, Gensys Archives, State Elections, November 1998 and November 2003, available on the web at <http://www.eci.gov.in>.

Goyal, S. and K. Staal, The Political Economy of Regionalism, European Economic Review, forthcoming.

Katyal, K. K., The Politics of the 'Strategic Vote', The Hindu, April 8, 2004.

Kumar, G. Gopa and CSDS Team, A Race between Traditional Rivals, Frontline (Indian fortnightly magazine), Volume 16 No. 23, November 6-23, 1999.

Kumar, Sanjay, Creation of New States: Rationale and Implications, Economic and Political Weekly, September 7, 2002.

Moulton, Brent R., Random Group Effects and the Precision of Regression Estimates, Journal of Econometrics, August 1986, Volume 32 (3).

Sharma, Sidharth, Creation of New States: Need for Constitutional Parameters, Economic and Political Weekly, September 20, 2003.

Sharma, Vinod and Rajnish Sharma, Shukla Spelt Jogi's Doom, The Hindustan Times, New Delhi, December 5, 2003.

Table 1: Summary Statistics for Madhya Pradesh and Chhattisgarh

		Madhya Pradesh	Chhattisgarh	All-India
Land Area		308,346 sq. km.	135,100 sq. km.	
Capital		Bhopal	Raipur	
Districts		45	16	
Population (2001) (in millions)		60.39	20.80	1027.02
Proportion Female (2001)		47.91	49.74	48.27
Proportion Urban (2001)		26.67	20.08	27.78
Population Density (2001) (People per sq. km.)		196	154	312
Child Sex Ratio (2001) (Female-to-Male)	Rural	941	982	934
	Urban	906	941	903
Crude Birth Rate (2001)	Total	30.8	25.4	26.3
	Rural	32.8	27.1	29.0
	Urban	23.0	20.2	22.4
Crude Death Rate (2001)	Total	10.0	8.8	8.4
	Rural	10.8	10.1	9.0
	Urban	7.2	7.0	6.3
Natural Growth Rate (2001)	Total	20.8	17.5	17.0
	Rural	22.0	18.9	18.0
	Urban	15.9	15.4	13.9
Infant Mortality Rate (2001)	Total	86	76	66
	Rural	92	88	72
	Urban	53	56	42
Reserved for Scheduled Caste Members		33 (14.35%)	10 (11.11%)	
Reserved for Scheduled Tribe Members		41 (17.83%)	34 (37.78%)	
Number of Assembly Constituencies		230	90	

Source: Most of the figures are taken from the 2001 Census of India. The last three rows are from the Election Commission of India.



Table 2a: Support for BJP and INC across Different Segments of Population  
(All-India Survey, 2003, all figures in percentages)

	Brahmin	Kshatriya	Kayastha	Jat	Vaishya	Yadav	MBCs	SCs	STs
Support BJP	71	59	66	61	56	59	52	43	46
Support INC	26	39	32	36	39	36	44	55	50
Don't Know	3	2	1	2	4	4	4	2	4

Notes: Brahmins, Kshatriyas, Kayasthas, Jats and Vaishyas comprise the traditional upper castes. MBC stands for Most Backward Castes. SC and ST stand for Scheduled Castes and Scheduled Tribes respectively.

Source for tables 2a and 2b: The data for this table come from the India Today-Aaj Tak-ORG-MARG poll, reported in the February 9, 2004 issue of India Today International. In the original data, there was a substantial fraction of correspondents replying "Others" (meaning other political parties) for all the segments. Since in Madhya Pradesh and Chhattisgarh, unlike most other parts of India, parties other than BJP and INC account only for a small share of the votes polled I have rescaled the numbers proportionally.

Table 2b: Support for BJP and INC across Different Segments of Population  
(All-India Survey, 2003, all figures in percentages)

	Male	Female	Muslims
Support BJP	54	48	24
Support INC	43	48	72
Don't Know	3	3	4

Table 2c: Support for BJP and INC across Different Segments of Population  
(All-India Survey, December, 1997, all figures in percentages)

		General (All)	Muslim	Rural	Lower Caste	Upper Caste
Party Support	BJP	50	14	48	46	66
	INC	50	86	52	54	34

Source: The data for this table come from the India Today-ORG-MARG poll, reported in the January 5, 1998 issue of India Today. Like in Tables 2(a) and 2(b), I have rescaled the numbers proportionally.

Table 3: Electoral Performance of BJP and INC, Madhya Pradesh and Chhattisgarh  
(1998 and 2003 Assembly Elections)

	1998 Elections		2003 Elections	
	Madhya Pradesh	Chhattisgarh	Madhya Pradesh	Chhattisgarh
Total Seats	230	90	230	90
Seats won by BJP	83	36	173	50
Percentage of Seats won by BJP	36.09	40.00	75.22	55.56
Percentage of Votes won by BJP	38.84	39.11	42.50	39.26
Seats won by INC	124	48	38	37
Percentage of Seats won by INC	53.91	53.33	16.52	41.11
Percentage of Votes won by INC	41.21	41.01	31.60	36.71

Source: Author's calculations from the 1993 and 1998 election results of undivided Madhya Pradesh, and the 2003 election results of Madhya Pradesh and Chhattisgarh.

Table 4: Percentage of Total Electors who Voted, Madhya Pradesh and Chhattisgarh  
(1998 and 2003 Assembly Elections)

	OLS			FE	
	(1)	(2)	(3)	(1)	(2)
Chhattisgarh	0.06 (1.12)	0.18 (1.05)	0.18 (1.83)		
Yr 2003	7.35** (0.70)	7.21** (0.71)	7.21** (0.56)	7.35** (0.37)	7.19** (0.35)
Chhattisgarh * Yr 2003	3.61* (1.47)	3.72** (1.40)	3.72** (0.90)	3.61** (0.62)	3.73** (0.58)
R <sup>2</sup>	0.24	0.24	0.24	0.91	0.91
Observations	640	640	640	640	640
Weighted	N	Y	Y	N	Y
Within-District Correlations	N	N	Y	–	–

The dependent variable is the percentage of total electors in an assembly constituency who cast their votes. Chhattisgarh is a dummy variable taking the value of 1 if the constituency is part of the Chhattisgarh region. Yr 2003 is a dummy variable for year 2003. The regressions in columns (2) are weighted by the number of electors in the constituency. There were 320 assembly constituencies in undivided Madhya Pradesh in 1998, and 230 and 90 in Madhya Pradesh and Chhattisgarh respectively in 2003. Robust standard errors are in parentheses. +, \*, \*\* denote significance at the 10, 5, and 1 percent levels.

Table 5: Performance of BJP in Madhya Pradesh and Chhattisgarh  
(1998 and 2003 Assembly Elections)

	Whether Won				Number of Votes Polled				Percentage of Votes Polled			
	Probit		FE		OLS		FE		OLS		FE	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Chhattisgarh	0.04 (0.06)	0.05 (0.06)			-1460 (1479)	-1211 (1973)			0.27 (1.31)	0.22 (1.39)		
Yr 2003	0.39** (0.04)	0.40** (0.04)	0.39** (0.04)	0.39** (0.04)	14111** (1448)	15124** (2039)	14111** (858)	15030** (1036)	3.37** (1.08)	3.58** (1.13)	3.37** (0.72)	3.56** (0.75)
Chhattisgarh * Yr 2003	-0.25** (0.08)	-0.27** (0.08)	-0.24** (0.08)	-0.25** (0.09)	-2965 (2559)	-2541 (3707)	-2965* (1457)	-2840 <sup>+</sup> (1687)	-3.08 <sup>+</sup> (1.84)	-2.98 (1.92)	-3.08* (1.40)	-3.07* (1.46)
R <sup>2</sup>	0.09	0.09	0.57	0.57	0.17	0.15	0.86	0.88	0.02	0.02	0.76	0.76
Observations	640	640	640	640	640	640	640	640	640	640	640	640
Weighted	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y

The dependent variable in columns (1)-(4) is a dummy variable, taking the value 1 if BJP won the seat, 0 otherwise. The dependent variable in columns (5)-(8) is the number of votes polled by BJP in each seat. The dependent variable in columns (9)-(12) is the percentage of votes polled by BJP in each seat. Chhattisgarh is a dummy variable taking the value of 1 if the constituency is part of the Chhattisgarh region. Yr 2003 is a dummy variable for year 2003. Columns (1)-(2) show results from running probit regressions, the figures shown are the estimated effects on probability of winning for discrete changes in the dummy variables from 0 to 1. The results from corresponding OLS regressions for this variable are very similar, and hence omitted. The regressions in even-numbered columns are weighted by the number of electors in the constituency. There were 320 assembly constituencies in undivided Madhya Pradesh, and 230 and 90 in Madhya Pradesh and Chhattisgarh respectively after the reconstitution. Robust standard errors are in parentheses. <sup>+</sup>, \*, \*\* denote significance at the 10, 5, and 1 percent levels.

Table 6: Performance of INC (Congress(I)) in Madhya Pradesh and Chhattisgarh  
(1998 and 2003 Assembly Elections)

	Whether Won				Number of Votes Polled				Percentage of Votes Polled			
	Probit		FE		OLS		FE		OLS		FE	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Chhattisgarh	-0.01 (0.06)	-0.01 (0.06)			-2191 (1540)	-2124 (1972)			-0.19 (1.34)	-0.19 (1.37)		
Yr 2003	-0.39** (0.04)	-0.39** (0.04)	-0.37** (0.04)	-0.38** (0.04)	677 (1346)	661 (1804)	761 (740)	737 (769)	-9.66** (1.12)	-9.72** (1.14)	-9.55** (0.80)	-9.55** (0.79)
Chhattisgarh * Yr 2003	0.30** (0.09)	0.31** (0.09)	0.25** (0.09)	0.27** (0.09)	5792** (2303)	6618* (3030)	5747** (1440)	6370** (1591)	4.67** (1.76)	4.83** (1.78)	4.59** (1.47)	4.69** (1.51)
R <sup>2</sup>	0.10	0.10	0.57	0.57	0.02	0.02	0.84	0.87	0.13	0.14	0.76	0.76
Observations	640	640	640	640	635	635	635	635	635	635	635	635
Weighted	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y

The dependent variable in columns (1)-(4) is a dummy variable, taking the value 1 if INC won the seat, 0 otherwise. The dependent variable in columns (5)-(8) is the number of votes polled by INC in each seat. The dependent variable in columns (9)-(12) is the percentage of votes polled by INC in each seat. Chhattisgarh is a dummy variable taking the value of 1 if the constituency is part of the Chhattisgarh region. Yr 2003 is a dummy variable for year 2003. Columns (1)-(2) show results from running probit regressions, the figures shown are the estimated effects on probability of winning for discrete changes in the dummy variables from 0 to 1. The results for the corresponding OLS regressions are very similar, and hence omitted. The regressions in even-numbered columns are weighted by the number of electors in the constituency. There were 320 assembly constituencies in undivided Madhya Pradesh, and 230 and 90 in Madhya Pradesh and Chhattisgarh respectively after the reconstitution. Robust standard errors are in parentheses. +, \*, \*\* denote significance at the 10, 5, and 1 percent levels.

Table 7: Performance of BJP in Madhya Pradesh and Chhattisgarh - Robustness Checks  
(1998 and 2003 Assembly Elections)

	Whether Won the Seat				Number of Votes Polled				Percentage of Votes Polled			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Chhattisgarh	0.05 (0.06)	0.05 (0.06)	0.05 (0.08)	0.05 (0.08)	-1211 (1973)	-1229 (1969)	-1229 (2661)	-1557 (2677)	0.22 (1.39)	0.22 (1.39)	0.22 (1.79)	-0.19 (1.80)
Yr 2003	0.39** (0.04)	0.44** (0.04)	0.44** (0.05)	0.45** (0.06)	15124** (2039)	14397** (2356)	14397** (2318)	14809** (2477)	3.58** (1.13)	3.42** (1.24)	3.42** (1.17)	3.59** (1.40)
Chhattisgarh * Yr 2003	-0.25** (0.09)	-0.22** (0.09)	-0.22* (0.11)	-0.24* (0.11)	-2541 (3707)	-2916 (3750)	-2916 (2176)	-3367+ (2249)	-2.98 (1.92)	-3.06+ (1.90)	-3.06+ (1.66)	-3.33+ (1.78)
Percentage of Electors who Voted		-0.01** (0.00)	-0.01* (0.00)	-0.01* (0.00)		101 (107)	101 (191)	104 (189)		0.02 (0.06)	0.02 (0.09)	0.03 (0.09)
R <sup>2</sup>	0.13	0.14	0.14	0.14	0.15	0.15	0.15	0.16	0.02	0.02	0.02	0.03
Observations	640	640	640	631	640	640	640	631	640	640	640	631
Allow for Within-												
District Correlations	N	N	Y	Y	N	N	Y	Y	N	N	Y	Y
Shorter Sample	N	N	N	Y	N	N	N	Y	N	N	N	Y

The dependent variable in columns (1)-(4) is a dummy variable, taking the value 1 if BJP won the seat, 0 otherwise. The dependent variable in columns (5)-(8) is the number of votes polled by BJP in each seat. The dependent variable in columns (9)-(12) is the percentage of votes polled by BJP in each seat. Chhattisgarh is a dummy variable taking the value of 1 if the constituency is part of the Chhattisgarh region. Yr 2003 is a dummy variable for year 2003. All the results are from OLS regressions, the FE regressions are very similar and hence omitted. The regressions are weighted by the number of electors in the constituency. There were 320 assembly constituencies in undivided Madhya Pradesh, and 230 and 90 in Madhya Pradesh and Chhattisgarh respectively after the reconstitution. Columns marked (4) drop the nine observations where neither BJP nor INC emerged as the winner or the runner-up. Robust standard errors are in parentheses. The standard errors in columns (3)-(4), (7)-(8) and (11)-(12) allow for correlations within districts. +, \*, \*\* denote significance at the 10, 5, and 1 percent levels.

Table 8: Performance of INC in Madhya Pradesh and Chhattisgarh - Robustness Checks  
(1998 and 2003 Assembly Elections)

	Whether Won the Seat				Number of Votes Polled				Percentage of Votes Polled			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Chhattisgarh	-0.02 (0.06)	-0.02 (0.06)	-0.02 (0.08)	-0.03 (0.08)	-2124 (1972)	-2178 (1958)	-2178 (2621)	-2690 (2592)	-0.19 (1.37)	-0.22 (1.37)	-0.22 (1.97)	-0.78 (1.92)
Yr 2003	-0.38** (0.04)	-0.41** (0.04)	-0.41** (0.06)	-0.42** (0.06)	661 (1804)	-2151 (1962)	-2151 (1429)	-2332+ (1325)	-9.72** (1.14)	-11.19** (1.25)	-11.19** (1.24)	-11.50** (1.13)
Chhattisgarh * Yr 2003	0.27** (0.09)	0.25** (0.09)	0.25* (0.11)	0.25* (0.11)	6618* (3030)	5107* (2605)	5107* (2329)	5130* (2294)	4.83** (1.78)	4.04* (1.76)	4.04* (2.06)	4.16* (2.07)
Percentage of Electors who Voted		0.01* (0.00)	0.01+ (0.00)	0.01* (0.00)		398** (88)	398** (137)	412** (134)		0.21** (0.06)	0.21* (0.09)	0.23** (0.08)
R <sup>2</sup>	0.13	0.14	0.14	0.14	0.02	0.05	0.05	0.06	0.14	0.16	0.16	0.17
Observations	640	640	640	631	640	640	640	631	640	640	640	631
Allow for Within-												
District Correlations	N	N	Y	Y	N	N	Y	Y	N	N	Y	Y
Shorter Sample	N	N	N	Y	N	N	N	Y	N	N	N	Y

The dependent variable in columns (1)-(4) is a dummy variable, taking the value 1 if INC won the seat, 0 otherwise. The dependent variable in columns (5)-(8) is the number of votes polled by INC in each seat. The dependent variable in columns (9)-(12) is the percentage of votes polled by INC in each seat. Chhattisgarh is a dummy variable taking the value of 1 if the constituency is part of the Chhattisgarh region. Yr 2003 is a dummy variable for year 2003. All the results are from OLS regressions, the FE regressions are very similar and hence omitted. The regressions are weighted by the number of electors in the constituency. There were 320 assembly constituencies in undivided Madhya Pradesh, and 230 and 90 in Madhya Pradesh and Chhattisgarh respectively after the reconstitution. Columns marked (4) drop the nine observations where neither BJP nor INC emerged as the winner or the runner-up. Robust standard errors are in parentheses. The standard errors in columns (3)-(4), (7)-(8) and (11)-(12) allow for correlations within districts. +, \*, \*\* denote significance at the 10, 5, and 1 percent levels.

Table 9: Performance of INC in Madhya Pradesh and Chhattisgarh - Robustness Checks  
(1993, 1998 and 2003 Assembly Elections)

	Whether Won			Number of Votes Polled			Percentage of Votes Polled		
	OLS		FE	OLS		FE	OLS		FE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Chhattisgarh	0.08 (0.06)	0.08 (0.07)		-2712 (1584)	-2712 (2198)		-0.88 (1.39)	-0.88 (1.82)	
Yr 1998	0.02 (0.05)	0.02 (0.06)	0.03 (0.04)	4163** (1459)	4163** (1502)	3743** (970)	-0.12 (1.19)	-0.12 (1.16)	-0.30 (0.87)
Chhattisgarh * Yr 1998	-0.10 (0.09)	-0.10 (0.10)	-0.10 (0.09)	588 (2529)	588 (1842)	807 (1601)	0.69 (1.95)	0.69 (1.55)	0.85 (1.61)
Yr 2003	-0.35** (0.04)	-0.35** (0.05)	-0.35** (0.04)	4824** (1466)	4824** (1539)	4430** (963)	-9.83** (1.05)	-9.83** (1.20)	-9.91** (0.85)
Chhattisgarh * Yr 2003	0.17* (0.08)	0.17+ (0.11)	0.17* (0.09)	7206** (2792)	7206** (2130)	7211** (1642)	5.51** (1.79)	5.51** (2.17)	5.58** (1.61)
R <sup>2</sup>	0.11	0.11	0.44	0.05	0.05	0.77	0.13	0.13	0.66
Observations	960	960	960	953	953	953	953	953	953
Allow for Within-District Correlations	N	Y	-	N	Y	-	N	Y	-

The dependent variable in columns (1)-(3) is a dummy variable, taking the value 1 if INC won the seat, 0 otherwise. The dependent variable in columns (4)-(6) is the number of votes polled by INC in each seat. The dependent variable in columns (7)-(9) is the proportion of votes polled by INC in each seat. Chhattisgarh is a dummy variable taking the value of 1 if the constituency is part of the Chhattisgarh region. Yr 1998 is a dummy variable for year 1998, similarly for Yr 2003. All regressions are weighted by the number of electors in the constituency. There were 320 assembly constituencies in undivided Madhya Pradesh, and 230 and 90 in Madhya Pradesh and Chhattisgarh respectively after the reconstitution. Robust standard errors are in parentheses. The standard errors in columns (2), (5) and (8) allow for correlations within districts. +, \*, \*\* denote significance at the 10, 5, and 1 percent levels.