Parachuters vs. Climbers: Economic Consequences of Barriers to Political Entry in a Democracy

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Abstract

How does political selection impact local economic growth? I study the role of a legislator's background prior to joining politics and conduct primary research to compile an original dataset of politicians' biographies. Observing the entry route of politicians allows me to classify them as 'parachuters' — those who are hereditary/dynastic or are part of the local socio-economic/cultural elite — and 'climbers', those who have made their way by rising up the ranks. I document three key results: one, barriers to political entry and post-colonial elite persistence have perverse economic consequences. Findings from a close election regression discontinuity design indicate that electing parachuters leads to 0.2 percentage point lower GDP growth per year compared to constituencies where climbers are elected. Two, a leader's entry route is a significant feature of political selection, even after controlling for conventional ascriptive identities such as sex, religion and ethnicity. Three, there is suggestive evidence that the impact is driven by misallocation of bureaucratic resources and neither regulation of technology adoption nor factor price manipulation are the underlying mechanisms.

Keywords: Political Economy, Political selection, Dynastic politics, Economic Development.
JEL codes: D72, O12, N45

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1 Introduction

It is December 1985 and a Lok Sabha by-election is taking place in Bijnor in western Uttar Pradesh, necessitated by the death of incumbent Chaudhuri Girdhari Lal. On one hand, you have Meira Kumar, daughter of veteran Congress leader Jagjivan Ram, who has quit the elite Indian Foreign Services and has been parachuted in to make her electoral debut in Uttar Pradesh, more than 800 kms away from her hometown in the neighbouring state of Bihar. Mounting a challenge to this "outsider" is Mayawati, daughter of a post office employee, who has been working at the grassroots building the organizational base of the Bahujan Samaj Party (BSP) for the past decade or so. (Interestingly, Mayawati is contesting as an 'independent' for the Election Commission hasn't allotted the BSP a party symbol yet, even though the party was formed an year earlier). The result? Meira Kumar wins her first election with 38 percent of the vote share and Mayawati finishes in third place, with just enough votes (18 percent) to avoid forfeiture of her deposit.

The case of Meira Kumar vs. Mayawati describes the main motivation of this research: two politicians belonging to same caste group, same sex, same religion, and even starting their political career at the around the same time[1] but having very different political entry routes: one is hereditary and the other makes her way by climbing from below. We examine two closely linked questions in this paper: (1) What are the entry routes of candidates who run for office and those who win elections? (2) What are the economic consequences of a political selection process where some candidates have a prior name-recognition advantage and others don't, where some are anointed and others are promoted by rising up the ranks, where some are 'parachuters' and others 'climbers'?

Attention to understanding the "type" of politicians is not new and has been studied previously, but not from the perspective I have in mind. Theoretical research in political economy has argued that when type is unobserved (as in the case of motivations of politicians, competence, honesty and character) selection issues arise and "low quality" politicians may be elected to office (Kartik and McAfee, 2007; Besley, 2007; Caselli and Morelli, 2004). When type is observed, empirical research has shown that politicians' characteristics such as sex (Chattopadhyay and Duflo, 2004), education (Besley et al., 2011; Dreher and Lamla, 2010), caste (Pande, 2003), and religion (Bhalotra et al., 2014) (Meyersson 2014) informs development in their constituencies. The focus, however, of most of the research has been on ascriptive identities. The current study departs from the existing literature by considering the entry route of politicians and analyzing whether their political background shapes their worldview and matters for the kind of work they will undertake in their constituency.

A small but growing body of work is considering non-ascribed identities such as criminal antece-

[1] Mayawati's first election was a year earlier than Meira Kumar's. Mayawati made her electoral debut in 1984 contesting from Kairana (Muzaffarnagar district), which she also lost.

dents, dynastic linkages[2] and social ties such as college alumni associations and other elite networks (Prakash et al 2017; Besley et al 2011; Dal Bo et al. 2009; Fisman et al. 2017; Jia et al. 2015). The objective of this paper is to take a broader view of political selection and investigating *all possible* entry routes of politicians. We focus on the legislator's background before she or he joined politics and classify politicians as 'parachuters' or 'climbers' depending on whether they are part of the political and socio-economic elite or not (parachuters = dynasties + elites). One constraint to conducting such a study has been the paucity of data. The typical approach would be to study occupation of politicians but in India, for example, majority of the politicians are either 'social activists' or 'agriculturalists', and these categories mask information about candidates' social background, non-farm sources of income, grassroots experience etc. We overcome this challenge by conducting an original primary data collection exercise where I compiled 'mini-biographies' of over 1,300 politicians entering and exiting politics in Bihar, a state in northern India, over a 25-year period (1990-2015). By combining this data with a rich set of economic outcomes, I am able to test whether elites favor growth or redistribution and the various mechanisms at play. Furthermore, I compare and contrast the impacts of elites who have prior name-recognition advantages with conventional identity-based traits that have been previously emphasized in the literature (but haven't been uniformly studied by pursuing a common identification strategy on a single dataset).

A priori, there is no reason to believe that parachuters are a boon or a curse because: (a) it is possible that they facilitate development because they have to protect their reputation and typically have access to extra resources to do so (as they are well connected/networked). Moreover, they could avoid time/dynamic inconsistency problems by planning for the long run. (b) On the other hand, it's equally possible that they channel less resources because of adverse selection or that don't value public goods and under-invest in their provision. Parachuters could also use their name-recognition advantage to undermine local institutions (like organization of political parties at the grassroots) by perhaps exacerbating rent-seeking activities, which in turn could have a negative impact on economic development.

We use a close election regression discontinuity (RD) design to compare economic growth in constituencies where parachuters narrowly win with places where they narrowly lose. We show that this research design is internally valid by verifying covariate balance on a wide range of economic and political controls. The results of the RD exercise show that parachuters have perverse economic consequences, as proxied by luminosity scores derived from satellite night-time lights. Estimates of GDP-to-night-lights elasticity show that electing parachuters leads to 0.2 percentage point lower

[2]Dynastic persistence is a significant feature of politics in South Asia such as India (20-30 percent), Pakistan (44 percent in 2013), Nepal (Koiralas), Sri Lanka (Senanayekes and Bandaranaikes), Bangladesh (Sheikh Hasina and Khaleda Zia), and Burma (Aung San Suu Kyi) (Chandra and Umaira, 2011). There is also anecdotal evidence to suggest that legislators have dynastic links in other Asian countries like in the case of China (the princelings), Japan, Singapore, Indonesia and Thailand. Dynasties also exist in other developing countries like Haiti, Argentina, Mexico and even in developed countries like the US (6 percent), UK (7 percent), Canada (7 percent), Norway (10 percent), Belgium (11 percent), Iceland (30 percent) and Italy Smith (2012).

GDP growth per year compared to constituencies where non-parachuters or 'climbers' are elected. We find that studying how political selection occurs and which type of politicians run for office is important because barriers to political entry have significant consequences in the economic sphere. Leader's entry route is a significant feature of political selection, even after controlling for conventional ascriptive identities such as sex, religion and ethnicity/caste.

This paper contributes, more generally, to the literature on deeper determinants of economic growth. There is now a consensus among economists that institutions play a crucial role and that economic development is an outcome of the dynamic interaction between economic institutions (like delineation of property rights and incentive structures in society) and political institutions (those that determine distribution of political power) (Acemoglu et al., 2005). While it is understood that extractive institutions are undesirable, the mechanisms through which they continue to have persisting effects is still an open question. By studying how political selection occurs and which type of politicians run for office, this paper sheds light on the barriers to political entry and provides evidence of a new channel (organizationally weak political parties) through which institutions matters. This paper also speaks to the literature on the impact of historical legacies and pushes back against the literature that overemphasizes the role of colonial institutions. It is important to clarify that very few of the elites being studied in this paper are landlords (remnants of the British colonial land tenure policy). The biographies of politicians point to 'homegrown elite persistence' and as such this throws up paradoxes because of the implications of such a pattern in a setting that serves as an example of a vibrant democracy. Examining this puzzle though is beyond the scope of the current paper.

The paper also adds to the studies on political competition and elite persistence. What are the strategies that elites could use to preserve own power? The literature outlines two keys suspects: (1) Firstly, elites could regulate technology adoption to block progress (Olson, 1982) and manipulate factor prices (Acemoglu, 2006). We do not find evidence for any differences in the depth of groundwater (a proxy for the use of tubewells, an irrigation technology in an agricultural setting) in places where parachuters narrowly win compared to where they narrowly lose. (2) Secondly, it's possible that corruption and revenue extraction is the underlying mechanism that depresses growth (Acemoglu, 2006). In the Indian context, bureaucratic control via 'transfers and posting' is a major source of revenue of rent seeking and one in which MLAs can play an important role (Ghosh, 1997; Saksena, 1993). We analyze data on around 100,000 transfers of investigating police officers (who form backbone of policing system) and show that places with greater proportion of elites have higher bureaucratic turnover, which in turn reduces efficiency of police investigation, increases crime rates and leads to lower growth. Thus, there's suggestive evidence that rent seeking and the subsequence mis-allocation of resources is a key mechanism through which institutions matter.

2 Context and Data

We study the implications of political selection at the sub-national level in India, because states play a critical role in a federal country like India. There are significantly more legislators at the state level (4120 Members of Legislative Assemblies (MLAs) across the country) than members of the bicameral parliament (545 directly elected Members of Parliament (MPs) and 245 indirectly elected members.[3]) In India's three tier system of governance, jurisdiction over defense, foreign affairs, banking, communications and currency rests with the Center/federal government. Police, agriculture, irrigation, labor markets, land rights, money lending, and retail taxes are 'state subjects'. Policy on education and health, inter alia[4], can be influenced by both states and the Center. The third tier of governance consists of local councils at the district, sub-district and village & town level. Elected representatives in over 600 districts, 6000 sub-districts and 250,000 villages & towns administer local infrastructure, identify targeted welfare recipients, and can collect property taxes & local fees. There is, however, mounting evidence that school building, electricity provision, road construction, performance of workfare programs and even non-agricultural employment is influenced by state level politics (Vaishnav, 2012; Min, 2009; Asher and Novosad, 2014; Mukhopadhyay et al., 2015; Novosad and Asher, 2012). MLAs play a critical role in this process and more crucially, citizens hold state governments and their elected representative (i.e. the MLAs) responsible for allocation and distribution of public goods (Chhibber et al., 2004).

Within India, our study is based in the state of Bihar. If Bihar was a country it would be ranked in the top 20 worldwide in terms of population size (99 million in 2012) but bottom 20 in terms of per capita income (the state average is $360; national Indian average is $1265). The last decade, though, has been transformative and Gross State Domestic Product has grown by around 10 percent. Elections in Bihar were held every 5 years. In the period of our study, the last 25 years, there were 6 elections: 1990, 1995, 2000, Feb 2005, Nov 2005, 2010 and are marked by two distinct regimes: Lalu Prasad Yadav from 1990 to 2005 and Nitish Kumar from 2005 to present. (The former is considered to be a period of low growth with resurgence happening after 2005.) We do not consider results from the Feb 2005 election in this paper because no government was formed due to a 'hung assembly' after

[3]In India, in the last decade (2004-2014), between 20 to 30 percent of the Members of Parliaments (MPs) were hereditary (Chandra and Umaira, 2011; French, 2011). Hereditary MPs in 2009 had peculiar characteristics: (1) They were, on average, ten years younger than their counterparts who have no significant family background; (2) Data shows they were 4.5 times wealthier than MPs with no significant family background (ADR). If one isolates the "hyper-hereditary" MPs (those MPs who have not just one, but multiple family connections in politics) then the following startling findings emerge: hyper-hereditary MPs were almost twice as rich as the hereditary MPs. More importantly, hyper-hereditary MPs were the wealthiest politicians and their average total assets was even more than MPs who were industrialists and came from a business background; (3) Findings from a 2014 survey illustrate that hereditary MPs elected in 2009 were associated with lower voter-reported satisfaction scores and that the difference was statistically significant (Daksh-ADR); (4) In another nationally representative survey that elicited preferences of voters before the 2014 elections, 46 percent of the sample reported that they would prefer to vote for a dynastic candidate while 54 percent reported that they would not (Lok survey); (5) In both the 2009 and 2014 elections, hereditary MPs won with wider margins and the difference again was statistically significant.

[4]Forest, trade unions, marriage and succession are some of the other items in the 'Concurrent List'

Feb/Mar 2005. Further, given that the elections were conducted in either February or March in years before the Nov 2005 reelection, the 5 electoral cycles I consider are: 1990-1994, 1995-1999, 2000-2005, 2006-2010 and 2010-2015. It is also important to clarify that a new state (Jharkhand) was carved out from the tribal regions of south Bihar in 2000 and I do not include constituencies belonging to this region in our sample. Therefore, I have a panel of 243 Assembly Constituencies (AC) – the level of our analysis – for the period under study[5]. Table 10 provides an overview of data used in this study and it is summarized below:

Candidate characteristics: For cand $i \in \{winner, runnerup\}$ in assembly constituency $ac \in \{1, 2, \ldots 243\}$ at time $t \in \{1990, 1995 \ldots 2010\}$, we observe (a) Sex: Female or Male; (b) Ethnicity/Jati which is recoded to a social group: Lower castes (Scheduled Castes/SC and Scheduled Tribes/ST), Middle (Other Backward Classes/OBC) or Upper (Other); (d) Religion: Muslim or Hindu; (e) Party: National (Indian National Congress/INC, Bharatiya Janta Party/BJP, Communist Party of India/CPI), Regional (Rashtriya Janta Dal/RJD, Janta Dal United/JDU etc.) or Independent/no affiliation; (f) Political background: Parachuter or Climber. This measure was constructed by coding biographies of politicians that were collected through extensive, fieldwork over multiple years. Appendix C.3 describes the research methodology adopted and provides examples of the biographies collected.

Electoral data: We combine the data on candidate characteristics with election data. Let $votes^1_{ac,t}$ and $votes^2_{ac,t}$ be the votes received by the winner and first runner-up in assembly constituency ac at time t and $v^{tot}_{ac,t}$ be the the total number of votes. For each AC we observe the following: (a) Margin of victory (b) Voter turnout (c) Effective number of candidates. Additionally, we also have polling station level data in each AC for every candidate i. However, this information is only available for the last two elections. We use these data to construct two measures of 'vote inequality' (see Appendix C.3 for details). The above two measures captures how spread out the votes received by a candidate are. A higher CV/Gini in 2010 implies that there was greater inequality in the distribution of votes when compared to 2005. In other words, the votes received by candidates came from a wider distribution of polling stations (instead of just being concentrated in a few ones).

Outcomes:

Economic growth: The primary outcome variable considered in this paper comes from satellite images recorded by the Defense Meteorological Satellite Program in the National Geophysical Data Center (NGDC) at a 30 arc-second grid resolution. Night time lights data has been succesfully used to proxy for economic growth at the country level and also for a group of regions (Henderson et al., 2009; Doll et al., 2000, 2006; Elvidge et al., 1997). In the Indian context, Min (2009) has used them to study the

[5]There were 324 assembly constituencies in undivided Bihar; 81 went to Jharkhand after the partition

politics of electricity provision and Novosad and Asher (2012) and Prakash et al. (2014) have relied on it to measure local economic development. The raster files available from NGDC have a pixel that records a luminosity score ranging from 0 to 63; data is availably yearly from 1992 to 2012 and is aggregated to the AC level. The measure used in the analysis is: growth rate of total luminosity score per 100,000 voters, where total luminosity score per capita is the sum of all light values in a constituency divided by total electors (registered voters). The main outcome variable is calculated for every year and the night lights are then aggregated and averaged over the following election years: 1992-1995; 1996-2000; 2001-2005; 2006-2010; 2011-2012.

Investment in public goods: Secondary outcome variables comes from an administrative dataset from the State Education Society, Bihar has details on the year in which schools were established. We also have the spatial coordinates of over 80,000 schools and we are able to match about 80 percent of the schools to the administrative dataset. This allows us to create a panel of schools built in Bihar since independence (until 2013) at the AC level, and this is used as a proxy for public good provision.

Technology adoption: Data on the groundwater depths comes from CGWB. It is an unbalanced quarterly panel of 20,166 wells, a majority of which are monitoring wells, over 1996-2012. Each year, observations are taken from the monitoring well at four points of time in the: post-monsoon rabi season (typically corresponding to January), pre-monsoon season (this could be either April, May or June), monsoon season (generally August) and post-monsoon kharif season (generally November). The data is aggregated to the AC-election year cycle level and used as a proxy of investments in irrigation technology (tubewells).

There are 2430 candidate-election observations ($243 \times 2 \times 5$) in our dataset. Table 1 presents the descriptive statistics for winners and first runner-ups, disaggregated by election year. Categorized biographies are available for more than 95 percent of the sample. There is a steady increase in the proportion of parachuters from around 64 percent in the 1990s to 77 percent by the end of our sample period. The increase is driven by the rise of hereditary politicians (which increased from 23 percent in 1990 to 40 percent in 2010). It is also important to point out that more than 85 percent of the female candidates are hereditary or related to a strongman. One in thirteen legislators are Muslims and around two out of five legislators belong to the middle castes (backward castes/BCs).

Table 2 presents the means of the above defined variables, disaggregated by election year. Elections in Bihar have increasingly become competitive as the margin of victory has steadily reduced (with the exception of 2010) and the effective number of candidates contesting elections has increased.

3 Theory

Consider the following model, based on Polo (1998):

3.1 Setup

Suppose there are N citizens each having a preference over a private good, c and a public good, g. We allow citizens to be heterogeneous and place different weights on their preference for the public good. Let α^i be this citizen specific parameter that is drawn from a distribution $F(\alpha)$ which has mean α. The utility for citizen $i \in (1, 2, \ldots N)$ is additively separable and given by the quasi linear preference:

$$u^i(c^i, g; \alpha^i) = c^i + \alpha^i H(g) \tag{1}$$

where, $H(.)$ is an increasing, twice differentiable concave function in its argument (so that $H_g^{-1}(.)$ is decreasing in its argument). The public good is financed by a proportion tax, t. We can allow individuals to have different incomes but in order to simplify the exposition we set $y^i = 1$ so that $c^i = (1-t)y^i = 1 - t$. We also abstract away from the consumer's labor supply problem: we could also allow for individuals to have preferences over consumption and leisure and vary by an individual productivity parameter but the main results would still carry through. Additionally, assume that voters have ideological preferences that are denoted by σ^i which is uniformly distributed with the support $[\frac{-1}{2\phi}, \frac{1}{2\phi}]$.

There are two politicians who are in the fray: climbers (C), those who make their way to the top by climbing the ladder, and parachuters (P), those who are parachuted because one or more of their family members were in politics or they did enter politics by rising through the ranks. $P-$type differ from $C-$type politicians in one crucial respect: they have a leg up in the race due to an inherited stock of political capital (which includes a reputation advantage, greater financial resources and established networks). Let the parameter $d > 0$ denote this parachuter advantage, so that $P's$ popularity is given by: $\delta = \tilde{\delta} + d$, where $\tilde{\delta}$ is a popularity shock that is uniformly distributed on the interval $[\frac{-1}{2\psi}, \frac{1}{2\psi}]$. Our treatment of the parachuter advantage is analogous to the discussion on lobbying in Persson and Tabellini (2002) which in turn is drawn from work by Baron and Grossman & Helpman.

Politicians are assumed to be office motivated and they seek to maximize their rents, $r^j, j \in \{C, P\}$. In other words, it is possible that revenue from taxes can be appropriated by politicians (as rents) and thus the government budget constraint is given by:

$$\int ty^i dF(\alpha^i) = t = g + r \tag{2}$$

The timing of the game is as follows:

1. Politicians simultaneously announce policy $q^j = (g^j, r^j)$, $j \in \{C, D\}$.
2. Popularity shock, $\tilde{\delta}$, is realized and elections are held immediately after. Citizens vote for politician C if $U(q^C; \alpha^i) > U(q^P; \alpha^i) + \sigma^i + \tilde{\delta} + d$.
3. The winning policy is implemented and the payoffs are realized.

3.2 Implications

In order to solve the model, we use the logic of backward induction. In the last stage the payoffs to the citizens is dependent on the policy platform and given by: $U(q^j; \alpha^i) = 1 - g^j - r^j + \alpha^i H(g^j)$. The last stage also implies that there is incentive for politicians to win the election and therefore politician j sets out to maximize its expected payoff: $W(q^j) = \pi^j r^j + (1 - \pi^j) \times 0 = \pi^j r^j$, where π^j is the probability of winning the election and is defined as:

$$\pi^j = Prob[s^j > \frac{1}{2}] \tag{3}$$

where s^j is the share of the votes politician j receives and this depends on the number of ideologically neutral voters. A "swing voter" is defined as one who is indifferent between voting for politician C and P and this is given by: $\hat{\sigma}(q^C, q^P, \tilde{\delta}, d; \alpha^i) = U(q^C; \alpha^i) - U(q^P; \alpha^i) - \tilde{\delta} - d = V(q^C, q^P; \alpha^i) - \tilde{\delta} - d$. This implies that all those citizens who have a draw of σ^i that is less than $\hat{\sigma}$ will vote for politician C.

$$s^C = \int [\frac{1}{2} + \phi\hat{\sigma}(q^C, q^P, \tilde{\delta}, d; \alpha^i)] dF(\alpha^i) \tag{4}$$

$$s^P = \int [\frac{1}{2} - \phi\hat{\sigma}(q^C, q^P, \tilde{\delta}, d; \alpha^i)] dF(\alpha^i) \tag{5}$$

Rolling the game back further and using (3) and (4)) implies that the probability of winning of politician C and D is:

$$\pi^C = \frac{1}{2} + \psi(V(q^C, q^P; \alpha) - d) \tag{6}$$

$$\Rightarrow \pi^p = \frac{1}{2} - \psi([V(q^C, q^P; \alpha) - d) \tag{7}$$

Moving back to the first stage, we see that the choice variables for politician j are g^j and r^j. The four best response equations can be found by solving the following maximization problem:

$$q^j(q^{-j}) \in argmax\{[\frac{1}{2} + \psi(U(q^j; \alpha) - U(q^{-j}; \alpha) - d)]r^j\} \tag{8}$$

With 4 FOC equations and 4 unknowns we can derive the equilibrium policy platforms. These are:

$$\bar{g}^C = H_g^{-1}(\frac{1}{\alpha}) = \bar{g}^D \tag{9}$$

$$\bar{r}^C = \frac{1}{2\psi} - \frac{d}{3} \tag{10}$$

$$\bar{r}^P = \frac{1}{2\psi} + \frac{d}{3} \tag{11}$$

Proposition 3.1. *A political equilibrium exists.*

Proof. There is a Nash equilibrium in this game where no player has any incentive to deviate. An equilibrium consists of a pair of policy platforms $(\bar{q}^C, \bar{q}^P)$ such that $\bar{q}^C$ is a best response to $P-$type's strategy and $\bar{q}^P$ is a best response to $C-$type's strategy. Citizens votes based on the rule specified earlier, after $\tilde{\delta}$ is realized and the winner implements the announced policy. Assuming a general utility function $u(c^i, g) = u(1 - g - r, g)$, the exact conditions under which a PE exists is given by the SOCs (i.e. the Hessian matrix should be negative semidefinite). □

Proposition 3.2. *Parachuters extract more rents in equilibrium.*

Proof. Using (10) and (11), it is evident that $\bar{r}^D > \bar{r}^C$. Intuitively, the high rents are a cost that voters have to pay for the popularity that results from the parachuter's advantage ($d > 0$) that type P politicians have. If we assume that taxes are fixed (which is not an unreasonable assumption given that the tax base as measured by the tax to GDP ratio in India hasn't significantly changed in many years) so that the modified government budget constraint is now given by: $\bar{t} = g + r$ and the only choice variable is r, then when equilibrium rents are set, the allocation to public goods is residually determined, implying that $P-$type politicians will provide less public goods than $C-$type politicians in equilibrium. □

Proposition 3.3. *Parachuters are likely to persist.*

Proof. Substituting the FOC, (9)-(11), in (6) and (7) we can show that $\pi^P > \frac{1}{2} > \pi^C$, implying that the probability of parachuters winning elections are greater than climbers. In other words, the $C-$type politicians can level the playing field only if there is a sharp negative popularity shock ($\tilde{\delta}$) or if there is no parachuter advantage i.e. $d = 0$ (in the latter case $\pi^C = \pi^P = \frac{1}{2}$). In order to make the argument about persistence though, we have to make an additional assumption that rents are used for campaigning activities which further enhance popularity of the politician. If $\delta_{t+1} = \tilde{\delta} + d + \lambda r_t^P$ where, $(1 - \lambda)$ signifies the costs of channeling the rents for campaign finance, then it is possible that rents extracted in equilibrium have a feedback effect which only helps entrench the rule of parachuters. □

Proposition 3.4. *Parachuter politicians under provide public goods as compared to the social optimum (and they provide the efficient level of public goods only under restrictive assumptions).*

Proof. In order to answer the normative question about whether $P-$type politicians are good or not, we compare the provision of public goods in (9) with the socially optimal provision of public goods being given by:

$$\max_{g,r} \int [c^i - \alpha^i H(g)] dF(\alpha^i)$$
$$s.t. \quad c^i = 1 - t$$

The efficient level of policy then is $g^* = H_g^{-1}(\frac{1}{\alpha^i})$ and $r^* = 0$. Under the specific functional assumption of the utility function that we have imposed, we do have $\bar{g}^C = \bar{g}^P = g^*$ but this result is driven by the fact that the income effect for public goods in case of quasi-linear preferences is 0, so that when the available budget with the government falls (due to higher rent extraction by $P-$type politicians there is no change in the level of $\bar{g}^j$). However, if we were to relax the restriction, then $r^{*\prime}$ would still be 0 but $g^{*\prime}$ would be different and can be found by equalizing the marginal utility of consumption of the private good with that of the public good. The policy from the maximization of the individual's problem would imply that the electoral competition is inefficient: $\bar{r}^{P\prime} > 0 = r^{*\prime} \Rightarrow \bar{g}^{P\prime} < g^{*\prime}$. □

4 Identification Strategy

We are interested in estimating the effect of a politician's characteristics and naturally the first place to start is to estimate:

$$Y_{ac} = \beta_1 + \beta_2 Parachuter_{ac} + e_{ac} \tag{12}$$

where $Y_{ac,t}$ is the outcome variable of interest in assembly constituency ac in time period t, $Parachuter_{ac,t}$ is an indicator variable that is 1 if the elected politician is socialized into politics 'from above' and 0 otherwise. We would like to estimate $\beta_2 = \frac{\partial Y_{ac}}{\partial Parachuter_{ac}}$. In our data, the average difference in the growth rate of lights between parachuter and climber constituencies (β_2 is -.031, which is 13 percent of the control mean (average growth rate in climber constituencies). But the baseline model has obvious omitted variable bias and OLS estimates are going to be inconsistent. One could address some of these concerns, partially, by including fixed effects and running the following regression:

$$Y_{ac,t} = \beta_1 + \beta_2 Parachuter_{ac,t} + \beta_3 X_{ac,t} + u_{ac} + v_t + e_{ac,t} \tag{13}$$

where, $X_{ac,t}$ are a set of time-varying constituency specific controls, like margin of victory, turnout and effective number of candidates; u_{ac} and v_t are AC and time fixed effects respectively; and the

error, $e_{ac,t}$ captures unobservable characteristics of the AC.

The results (not shown) suggest that the estimated effect, β_2 is between -0.0243 and -0.031, depending on the number of fixed effects included in the model. One might, justifiably, still worry that politicians with a particular identity or background might be different than others who do not belong to the same group on unobservables like preferences or ideology that could also influence the outcome variable. We might also have reverse causality and it's possible that parachuters might be elected from poor places and perhaps low development outcomes guide election of such politicians rather than the other way around. To guard against endogeneity concerns, we use a close election regression discontinuity design and compare outcomes in constituencies where parachuters barely won (treatment) with those they narrowly lost (control). The forcing/running variable is defined as follows:

$$movParachuter_{ac,t} = \frac{votes_{ac,t}^{Parachuter} - votes_{ac,t}^{Climber}}{votes_{ac,t}^{total}} \tag{14}$$

The estimating equations are:

$$\begin{aligned} y_{ac,t} = \beta_1 + \beta_2 1(movParachuter_{ac,t} > 0) + \beta_3 movParachuter \\ + \beta_4 1(movParachuter_{ac,t} > 0) \times margin + X_{ac,t} + Z_i + u_t + e_{ac,t} \end{aligned} \tag{15}$$

$$\begin{aligned} y_{ac,t} = \beta_1 + \beta_2 1(movParachuter_{ac,t} > 0) + f(margin) \\ + 1(movParachuter_{ac,t} > 0) \times g(margin) + X_{ac,t} + Z_i + u_t + e_{ac,t} \end{aligned} \tag{16}$$

where,

- β_2 is the coefficient of interest (impact of parachuters)
- y_{cst} is an outcome of interest (growth, groundwater depth, school construction) in constituency ac at time t
- $f(\cdot)$ and $g(\cdot)$ are quadratic or cubic polynomial functions
- $X_{ac,t}$ are constituency level controls, Z_i are candidate-level controls and u_t are time fixed effects
- Standard errors $e_{ac,t}$ are clustered at the constituency level

The key identification assumption is that there is a discontinuity in the treatment when the forcing variable is zero (in the example above, the treatment i.e. assignment of parachuter politician is 1 when

$movParachuter$ is positive and 0 when it is negative) and that constituencies on either side of the cutoff are similar to each other. Figure 1 shows the density of the running variable, $movParachuter$. We perform a McCrary test of continuity in the density of the running variable around the treatment threshold of zero (McCrary 2008) and cannot reject that the threshold cannot be manipulated.

5 Findings

Before we discuss the RD estimates, we present a series of graphs that check for covariate balance on either side of the cutoff in 9 depicts the RD estimates corresponding to Figure 3, 4, 5, 6, 7 and 8. We consider four main categories of pre-determined covariates: (a) initial economic conditions (b) political competition (c) candidate's identity (time-invariant), and (d) candidate characteristics (time-varying). The initial economic conditions (circa 1990) considered include demographic features such as population, network infrastructure such as access to roads, electricity and other measures of economic prosperity such as area under irrigation and firm employment. We also directly test for differences in initial levels of lights (ln(luminosity score) in 1990) and the lagged growth rates and show that there is no difference between 'treatment' and 'control' on these two observables (which one might worry are correlated with the main outcome variable: growth rate of lights). We consider constituency-level measures of political competition such as electorate size, voter turnout, effective number of candidates and ascriptive identities of politicians such as their sex, religion and ethnicity. We also consider time-varying candidate characteristics such as affiliation to a national-party, being part of the ruling party in government and incumbency. Table 9 shows that, at the cutoff, the point estimate for the 21 out of the 22 covariates being considered is statistically indistinguishable from zero.

Having established 'balance', we now consider the impact on growth rate of lights/luminosity. Figure 9 depicts this visually by fitting a polynomial of the fourth degree on the two sides of the running variable. We note that there's a discontinuity very close to the margin of victory with there being lower growth in constituencies in which parachuters only barely won. The RD estimates are presented in Table 3. The bandwidth for this local linear regression was calculated according to CCT (2017). We can also estimate impacts using higher oder polynomial function of the forcing variable (col 3-6) instead of a linear function (col 1-2). The local average treatment effect for parachuters is lowering growth between 20-40 log points and compared to the average growth rate of 20 log points this is a meaningful effect.

Robustness checks using alternative bandwidths, different kernels are presented in Figure 13 and they confirm the magnitude and statistical significance of the above results. In addition to the conventional RD estimates with conventional variance estimator, the kernel weighted regression were re-estimated to derive bias-corrected RD estimates (using both the conventional variance estimator and robust variance estimator) and the findings were robust to this as well (Table 5, col (1)).

In Table 4 we explore whether the treatment effect varies according the politician's term. We present results for four different bandwidths, including one for extremely close elections ($h/4 = 0.03$). We find that in close elections, the result is driven by term 3 and term 4. Since lights are a lagging indicator of economic activity, we can interpret these results as worsening economic conditions.

In Table 5 we present results from the kernel-weighted regression after including additional covariates. We add constituency-level controls like turnout and ENOC in col (2) and candidate-level controls like sex, religion, ethnicity, party affiliation and ruling party alignment in col (3). We find that adding controls only marginally affects the point estimate. We also control for the candidate's incumbency status in col (4) and while this reduces the point estimate by almost half the results continue to be statistically significant. It is also important to note that the coefficients on the 'identity' of the candidate were smaller than the one on parachuters suggesting that political background is an important factor when considering local economic growth.

Studying long run economic growth over more than 150 years, Besley et al. (2011) find that hereditary rule increases growth, but only when constraints are weak. Bihar's experience can also help shed light on this question. Bihar's growth experience, post 1990s, can be broadly classified in two distinct regimes: Lalu Prasad Yadav's regime (1990-2005) and Nitish Kumar's regime (2005-present). Nitish's rule-based governance was a sharp contrast from Lalu's rule which was often based on personal diktat. We can thus consider the period from 1990 to 2005 as one where executive constraints were weak and the years from 2005 to 2015 as one where executive was much more powerful. Table 6 shows that parachuters have a greater negative impact when constraints are weak. While these findings contradict the ones from Besley (2013), they are intuitive because in the context of Bihar weak executive constraints increases the role that legislators can play in affecting governance.

It is important to underline that in the present study, strongmen (or politicians who are accused of serious criminal charges) are considers as 'climbers'. Prakash et al. (2014) argue that such types of politicians lead to lower growth rates. It could be that constituencies where strongmen are elected have higher crime rates which in turn depresses growth. However, our findings suggests that the opposite is true (as climbers are associated with higher growth). In the absence of crime data at the constituency-level one can compile district-level crime data and classify districts which have high crime (above median) and low crime (below median). We consider the rate of economic crimes to categorize the districts because we expect parachuters (who are part of the socio-economic elite) to have a greater propensity to indulge in these types of crimes, as opposed to violent or property crime. Table 7 restricts the sample to these sets of districts and re-estimating the impact of parachuters indicates that the findings are driven by lower growth rates in high crime districts. This is consistent with new research on criminally accused politicians which shows that strongmen can "get things

done" (Vaishnav 2017).

In order to better understand the mechanisms behind the negative reduced form impact, we turn to a model of electoral competition based on probabilistic voting described in earlier. Assuming that politicians are rent seeking, a popularity shock for parachuters implies that parachuters can extract more rents in equilibrium. Moreover, we can show that parachuters may persist (explaining the rising proportion of parachuters in our sample over time) if they can successfully channel their rents to win elections. In Figure 15 we explore whether parachuters indulge in vote buying by considering the concentration of votes received by them in an election. If parachuters use their rents to buy turnout then one might expect our measures of vote inequality to be higher for parachuters than for climbers. The idea is that if parachuters concentrate their resources on only a few polling stations (whereas climbers have broad based support across polling stations) then our measures of concentration should be higher for parachuters. The RD estimates, however, suggest that we cannot reject the hypothesis that there is no vote-buying (Figure 15. This could also imply that our measures are inadequate proxies of vote-buying (because they don't include the spatial dimension of targeting).

In order to test the predictions of the model which suggests that parachuters also under provide public goods in the political equilibrium, we explore whether parachuters are more or less likely to invest in education. Figure 10 validates the findings of the model. These results need to be interpreted cautiously because the findings from the 5-year election window do not confirm that from the 4-year window (even though the former is statistically insignificant and the latter is not).

The findings of the study suggest that parachuters have a deleterious impact on growth. We now consider the mechanisms though which parachuters might be affecting economic outcomes. The literature outlines two keys suspects: one, elites could block access to technology and manipulate factor prices to maintain their power and two, they could indulge in rent seeking. Figure 11 shows that we find no change in technology adoption in constituencies where parachuters win vs where they lose. In order to test the rent seeking hypothesis, we consider the nexus between legislators and bureaucrats. In India, bureaucratic control via 'transfers and posting' is a major source of revenue of rent seeking and one in which MLAs can play an important role (Ghosh, 1997; Saksena, 1993).

We examine the transfers of non-IAS police officers (inspectors, sub-inspectors and assistant sub-inspectors who form backbone of policing system) and find that places with greater proportion of hereditary politicians have higher bureaucratic turnover which reduces efficiency of investigation and in turn increases economic crime in the district. Table 8 reports that the elasticity of turnover to economic crimes is 0.17. In other words, a 10 percent increase in average duration of investigating officers is associated with a 17 percent increase in economic crimes. We also report the association between average tenure and total crime (col 1-3) and find that no relationship. While these

results don't lend themselves to a causal interpretation, the aggressive fixed effects structure and a placebo check ruling out a positive relationship between all crime suggest that correlation may not be explained by reverse causality. In Figure 12 we show the correlation between the average proportion of parachuter politicians with turnover (number of transfers) and tenure (duration spent in the district). A positive correlation with turnover and tenure suggests a stability in the parachuter-bureaucrat nexus (with plausibly non-cooperating officers being shunted out of the district). This result squares up with the finding from Table 7 which shows that in the the depressed growth effects come from the districts which have high crime rates, thus providing evidence on how revenue extraction is the mechanism that could explain these results.

To sum up, the objective of this research was to examine the impact of political socialization of leaders on local development by analyzing their impact on local economic and political institutions. Evidence suggests that political background is important and that parachuters negatively influence economic development. We use this to argue that a politician's background i.e. how she or he entered politics is indicative of the type of a politician and is a key missing variable in the literature which stresses that institutions matter for development. The study also underlines the role of sub-national leaders in the development process and shed light on their motivations. It is part of a larger research agenda that aims to understand concentration of power in a democracy. If politicians are elected by a free and fair electoral process then how do parachuters reflect on the merits of the people? How do they coexist alongside the rapid democratization of society? Why do parachuters persist in some places and not in others? Answering these questions will help expand our notion of political inequality and examine the workings of a closed political system. This is particularly crucial not just because India is the world's largest democracy but every third person living in a democracy is Indian.

References

Acemoglu, D. (2006). A simple model of inefficient institutions. *The Scandinavian Journal of Economics*, 108(4):515–546.

Acemoglu, D., Johnson, S., and Robinson, J. A. (2005). Institutions as a fundamental cause of long-run growth. *Handbook of economic growth*, 1:385–472.

Asher, S. and Novosad, P. (2014). The employment effects of road construction in rural india.

Besley, T. (2007). *Principled agents?: The political economy of good government.* Oxford University Press.

Besley, T. (2013). Selection via dynasties: Theory and evidence.

Besley, T., Montalvo, J. G., and Reynal-Querol, M. (2011). Do educated leaders matter? *The Economic Journal*, 121(554):F205–227.

Bhalotra, S., Clots-Figueras, I., Cassan, G., and Iyer, L. (2014). Religion, politician identity and development outcomes: Evidence from india. *Journal of Economic Behavior & Organization.*

Caselli, F. and Morelli, M. (2004). Bad politicians. *Journal of Public Economics*, 88(3):759–782.

Chandra, K. and Umaira, W. (2011). India's democratic dynasties. *Seminar Magazine.*

Chattopadhyay, R. and Duflo, E. (2004). Women as policy makers: Evidence from a randomized policy experiment in india. *Econometrica*, 72(5):1409–1443.

Doll, C. H., Muller, J.-P., and Elvidge, C. D. (2000). Night-time imagery as a tool for global mapping of socioeconomic parameters and greenhouse gas emissions. *AMBIO: a Journal of the Human Environment*, 29(3):157–162.

Doll, C. N., Muller, J.-P., and Morley, J. G. (2006). Mapping regional economic activity from night-time light satellite imagery. *Ecological Economics*, 57(1):75–92.

Dreher, A. and Lamla, M. J. (2010). On the selection of leaders. an empirical analysis.

Elvidge, C. D., Baugh, K. E., Kihn, E. A., Kroehl, H. W., Davis, E. R., and Davis, C. W. (1997). Relation between satellite observed visible-near infrared emissions, population, economic activity and electric power consumption. *International Journal of Remote Sensing*, 18(6):1373–1379.

French, P. (2011). *India: a portrait.* Random House Digital, Inc.

Henderson, J. V., Storeygard, A., and Weil, D. N. (2009). Measuring economic growth from outer space. Technical report, National Bureau of Economic Research.

Kartik, N. and McAfee, R. P. (2007). Signaling character in electoral competition. *The American economic review*, pages 852–870.

Min, B. (2009). Distributing power: public service provision to the poor in india. In *American Political Science Association Conference, Toronto*.

Mukhopadhyay, A., Sharan, M., et al. (2015). The national rural employment guarantee scheme in rajasthan: Rationed funds and their allocation across villages.

Novosad, P. and Asher, S. (2012). Political favoritism and economic growth: Evidence from india.

Olson, M. (1982). The rise and decline of nations: Economic growth, stagflation, and economic rigidities.

Pande, R. (2003). Can mandated political representation increase policy influence for disadvantaged minorities? theory and evidence from india. *The American Economic Review*, 93(4):1132–1151.

Persson, T. and Tabellini, G. E. (2002). *Political economics: explaining economic policy*. MIT press.

Polo, M. (1998). Electoral competition and political rents. *Mimeo*.

Prakash, N., Rockmore, M., and Uppal, Y. (2014). Do criminal representatives hinder or improve constituency outcomes? evidence from india.

Smith, D. M. (2012). Succeeding in politics: dynasties in democracies.

Vaishnav, M. (2012). *The Merits of Money and Muscle: Essays on Criminality, Elections and Democracy in India*. PhD thesis, COLUMBIA UNIVERSITY.

A Tables

Table 1: Descriptive stats

	(1) All	(2) 1990	(3) 1995	(4) 2000	(5) 2005	(6) 2010
A. Winner:						
Female	0.07	0.03	0.03	0.06	0.10	0.14
Muslim	0.08	0.07	0.08	0.10	0.07	0.08
Upper caste	0.27	0.35	0.19	0.24	0.25	0.33
Middle caste	0.43	0.38	0.49	0.45	0.46	0.37
Lower caste	0.22	0.20	0.24	0.21	0.23	0.22
National party	0.56	0.86	0.92	0.30	0.30	0.40
Ruling party	0.64	0.47	0.75	0.54	0.59	0.85
Incumbent	0.36		0.41	0.34	0.33	
Parachuter	0.70	0.64	0.63	0.71	0.76	0.77
N	1215	243	243	243	243	243
B. Runner-up:						
Female	0.07	0.02	0.05	0.05	0.09	0.12
Muslim	0.13	0.11	0.08	0.14	0.16	0.15
Upper caste	0.31	0.37	0.43	0.27	0.27	0.21
Middle caste	0.35	0.34	0.28	0.37	0.35	0.41
Lower caste	0.21	0.19	0.19	0.22	0.21	0.23
National party	0.49	0.79	0.81	0.39	0.30	0.16
Ruling party	0.23	0.18	0.17	0.43	0.24	0.13
Incumbent	0.25		0.23	0.25	0.27	
Parachuter	0.68	0.54	0.61	0.66	0.76	0.81
N	1215	243	243	243	243	243

Note: Panel A and B in Table 1 depict the characteristics of the winner and first runner-up respectively. Upper caste refers to Brahmin, Bhumihar, Kayastha and Rajput. Middle caste refers to Yadav, Kushwaha, Kurmi, Koeri, Baniya, Kalwar, Marwari and Kahar. Lower caste refers to the Dalits (scheduled castes like Paswan, Chamar, Pasi, Musahar, Dhobi, Bhuiya, Rajwar), tribals (scheduled tribes) and extremely backward classes such as Teli, Gangota, Nishad, Kevart, Bind, Nai, Noniya, Dhanuk, Dangi and Mallah. National party refers to whether the politician belonged to a political party that received national party (as opposed to a state/regional party) status by Election Commission of India at time of elections. Ruling party refers to whether politician was either directly part of the government or indirectly part of it via an alliance. A parachuter is defined as a politician who is part of the socio-economic and political elite (either hereditary or a landlord or has a business background or connected via social ties).

Table 2: Descriptive statistics (mean) of constituency-level data, by election cycle

	(1) All	(2) 1990	(3) 1995	(4) 2000	(5) 2005	(6) 2010
A. Full sample:						
Growth of lights per voter	0.20	0.49	0.13	−0.06	0.08	0.36
Growth of lights per pixel	0.21	0.49	0.14	−0.06	0.08	0.37
Schools	22.64	6.62	10.75	6.82	62.72	2.36
Groundwater depth	3.32		2.87	3.15	3.59	3.66
Victory margin	0.14	0.14	0.18	0.13	0.10	0.12
Turnout	0.57	0.64	0.60	0.64	0.46	0.53
Effective candidates	3.79	3.90	4.10	3.58	3.37	4.01
Votes inequality	0.51				0.52	0.51
N	1215	243	243	243	243	243
B. Parachuter vs climber elections:						
Growth of lights per voter	0.20	0.50	0.13	−0.07	0.10	0.35
Growth of lights per pixel	0.21	0.50	0.15	−0.06	0.10	0.36
Schools	20.10	6.38	10.95	6.51	61.47	1.47
Groundwater depth	3.24		2.93	3.20	3.51	3.49
Victory margin	0.14	0.14	0.18	0.13	0.10	0.13
Turnout	0.58	0.64	0.60	0.64	0.46	0.52
Effective candidates	3.77	3.89	3.96	3.54	3.34	4.09
Votes inequality	0.50				0.50	0.50
N	459	104	111	96	77	71

Note: Panel A and B in Table 2 depict means from the full sample and sample of close elections (where parachuters contest against climbers) respectively. Close elections are defined if the margin of victory is less than 11.6 percent ($h = 0.116$, where h is the optimal bandwidth calculated according to CCT 2017). Growth rate of lights per voter refers to the difference in the ln(luminosity score per 100,000 voters); growth rate of lights per pixel is calculated as the difference in the ln(mean luminosity score in a pixel); schools is defined as the number of schools established; groundwater depth is the depth of the water table in the Kharif (lean) season in November (in meters below ground level). Victory margin, turnout and effective candidates are measures of political competition in the assembly constituency. Victory margin is the difference in the share of votes received by the winner and first runner-up. Turnout refers to the proportion of electors who cast their vote in the election. Effective number of candidates is defined in 19. Votes inequality is the coefficient of variation of the vote shares across polling stations, within a given constituency.

Table 3: Impact of parachuters on growth in close elections

	Linear		Polynomial: quadratic		Polynomial: cubic	
	(1)	(2)	(3)	(4)	(5)	(6)
Parachuter	−0.22	−0.17	−0.42	−0.30	−0.48	−0.25
	(0.13)*	(0.12)	(0.16)**	(0.15)**	(0.17)***	(0.15)*
Initial level of ln(luminosity)		−0.08		−0.07		−0.08
		(0.02)***		(0.02)***		(0.02)***
N	237	237	237	237	237	237
Mean	0.24	0.24	0.24	0.24	0.24	0.24

Note: Table 3 presents results for (triangular) kernel RD estimates of the impact of parachuters on growth rate of night lights, measured by difference in ln(luminosity scores) over the election cycle. A four-year window of the election cycle is chosen to avoid biasing the estimate due effects of an election year. Each coefficient in this table represents a separate regression using local linear and polynomial controls. The optimal bandwidth ($h = 0.116$) was calculated according to the algorithm in CCT (2017). Standard errors are clustered at the constituency level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 4: Impact of parachuters on growth, by term

	(1) Term 1	(2) Term 2	(3) Term 3	(4) Term 4	(5) Term 5
A. Bandwidth = h/4					
Parachuter	−0.01	−0.19	−0.27	−0.71	0.28
	(0.24)	(0.20)	(0.55)	(0.41)*	(0.24)
N	43	43	52	52	52
Mean	-.028	.25	.084	.31	.15
B. Bandwidth = h/2					
Parachuter	−0.20	0.13	−0.38	−0.60	0.23
	(0.19)	(0.19)	(0.43)	(0.33)*	(0.19)
N	89	89	110	110	110
Mean	-.044	.28	.072	.32	.13
C. Bandwidth = h					
Parachuter	−0.20	0.25	−0.45	−0.13	−0.03
	(0.13)	(0.16)	(0.32)	(0.26)	(0.15)
N	182	182	196	196	196
Mean	-.052	.3	.037	.31	.1
D. Bandwidth = 2h					
Parachuter	−0.10	0.12	−0.12	−0.14	−0.07
	(0.10)	(0.12)	(0.23)	(0.19)	(0.12)
N	293	293	310	310	310
Mean	-.039	.29	.013	.32	.1

Note: Table 4 presents results for (triangular) kernel RD estimates of the impact of parachuters on growth rate of night lights, measured by difference in ln(luminosity scores) by the politician's term period. The growth rate is winsorized at the 5th and 95th percentiles. Each coefficient in this table represents a separate regression using local linear regression. The optimal bandwidth ($h = 0.116$) was calculated according to the algorithm in CCT (2017) and the four panel present results for alternative bandwidths: Panel A ($h/4 = 0.03$), Panel B ($h/2 = 0.058$), Panel C: ($h = 0.116$) and Panel D: ($2h = 0.232$). Standard errors are clustered at the constituency level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 5: Impact of parachuters on growth including covariates

	(1)	(2)	(3)	(4)
Conventional	−0.21	−0.21	−0.18	−0.12
	(0.12)*	(0.12)*	(0.12)	(0.05)**
Bias-corrected	−0.25	−0.25	−0.22	−0.14
	(0.12)**	(0.12)**	(0.12)*	(0.05)***
Robust	−0.25	−0.25	−0.22	−0.14
	(0.14)*	(0.14)*	(0.14)*	(0.06)**
N	241	235	249	97
Bandwidth	.12	.11	.12	.078
Constituency controls	No	Yes	Yes	Yes
Candidate controls	No	No	Yes	Yes
Incumbency control	No	No	No	Yes

Note: Table 5 presents results for (triangular) kernel-weighted RD estimates of the impact of parachuters on growth rate of night lights, measured by difference in ln(luminosity scores) over the election cycle (4-year window). Robust bias-corrected standard errors are also reported for all regressions. The optimal bandwidth ($h = 0.116$) was calculated according to the algorithm in CCT (2017). Col (1) doesn't include any controls; col (2) includes constituency level controls of political competition: effective number of candidates and voter turnout; col (3) adds controls for candidate level characteristics such as sex of candidate/an indicator variable for whether candidate is female or not, religion of candidate/an indicator variable for whether candidate is Muslim or not, ethnicity of candidate/an indicator variable whether candidate is upper caste or not, another indicator variable whether candidate belongs to the middle caste or not, party of candidate/an indicator variable for whether candidate belongs to a national party or not and ruling party alignment/an indicator whether candidate was part of the government or not; col (4) adds an indicator variable for whether candidate was an incumbent or not. Candidate incumbency is only available for 1995, 2000 and 2005. Redrawing of constituency boundaries by Delimitation Commission of India in 2008 prevents estimating incumbency status. Standard errors are clustered at the constituency level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 6: Heterogeneous impact of parachuters on growth, by executive constraints

	Bandwidth: h		Bandwidth: h/2	
	(1)	(2)	(3)	(4)
Parachuter	−0.40	0.14	−0.52	−0.12
	(0.15)**	(0.11)	(0.21)**	(0.17)
N	144	93	82	46
Mean	0.20	0.30	0.23	0.28
Sample restriction:				
Executive constraints	Weak	Strong	Weak	Strong

Note: Table 6 presents results for (triangular) kernel-weighted RD estimates of the impact of parachuters on growth rate of night lights, measured by difference in ln(luminosity scores) over the election cycle (4-year window). Each coefficient in this table represents a separate regression using a local linear control function using two bandwidths: the optimal bandwidth ($h = 0.116$), which was calculated according to the algorithm in CCT (2014) and $h/2 = 0.058$. Col (1) and col (3) restrict the sample to periods when executive constraints were weak (Lalu Prasad Yadav's regime from 1990-2005) and col (2) and col (4) restrict to periods when executive constraints were strong (Nitish Kumar's regime from 2005-2015). A SUR test of equality between impact of parachuters in weak vs strong constraints has a p-value of 0.0292 when using bandwidth h and p-value of 0.2094 when using bandwidth $h/2$. Standard errors are clustered at the constituency level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 7: Heterogeneous impact of parachuters on growth, by crime

	Bandwidth: h		Bandwidth: h/2	
	(1)	(2)	(3)	(4)
Parachuter	0.07	−0.42	−0.12	−0.64
	(0.12)	(0.18)**	(0.14)	(0.25)**
N	119	118	66	62
Mean	0.17	0.31	0.14	0.36
Sample restriction:				
Economic crime	Low	High	Low	High

Note: Table 7 presents results for (triangular) kernel-weighted RD estimates of the impact of parachuters on growth rate of night lights, measured by difference in ln(luminosity scores) over the election cycle. Each coefficient in this table represents a separate regression using a local linear control function using two bandwidths: the optimal bandwidth ($h = 0.116$), which was calculated according to the algorithm in CCT (2014) and $h/2 = 0.058$. Col (1) and col (3) restrict the sample to districts which have below median rates of economic crime, whereas col (2) and col (4) restrict the sample to districts with above median rates of economic crime. Standard errors are clustered at the constituency level. A SUR test of equality between impact of parachuters in low and high crime districts has a p-value of 0.398 when using bandwidth h and p-value of 0.0523 when using bandwidth $h/2$. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

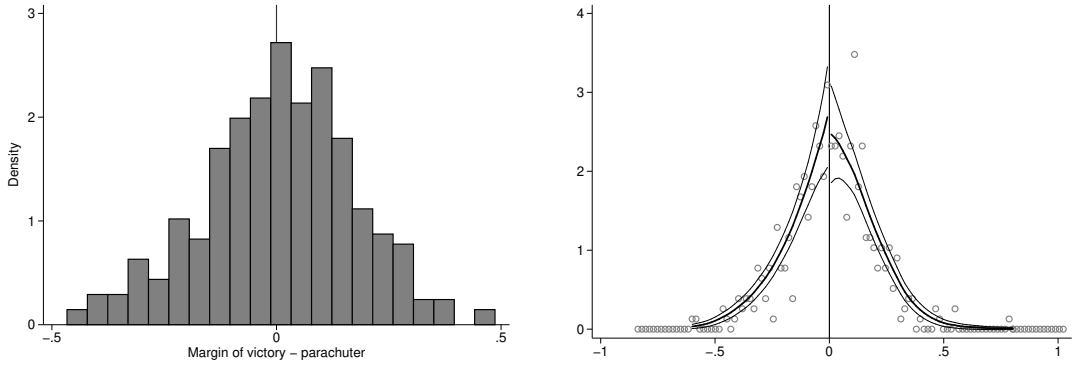
Table 8: Association between bureaucratic turnover and crime

	Ln(All crime)			Ln(Economic crime)		
	(1)	(2)	(3)	(4)	(5)	(6)
Ln(duration)	0.01	0.01	0.01	0.12	0.16	0.17
	(0.02)	(0.02)	(0.02)	(0.08)	(0.08)*	(0.08)**
N	444	432	432	444	432	432
Mean	7.80	7.81	7.81	4.27	4.28	4.28
District FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Zone × year trends	No	Yes	No	No	Yes	No
Range × year trends	No	No	Yes	No	No	Yes

Note: Table 8 presents results from the following regression in a district-year panel: $ln(duration)_{dt} = \beta ln(crime)_{dt} + u_d + f(t) + e_{dt}$ where, $ln(duration)_{dt}$ is the log of average tenure of investigating officers in district d in year t; $ln(crime)_{dt}$ is the log of crime (either total crime or economic crimes) in district d in year t; u_d are district fixed effects; $f(t)$ are non-parametric controls such as year FE, zone × year trends and range × year trends; e_{dt} is the idiosyncratic error term that is clustered at the district level. Police range/zones are administrative units corresponding to the police organization. A police range is a collection of districts that is led by an officer at the rank of at least a Deputy Inspector-General (DIG) whereas a police zone is group of ranges that is led by an office with at least a rank of Inspector-General (IG). There were 37 districts in Bihar in 2001, 11 police ranges and 4 police zones. The coefficient of interest is β which measures the crime-turnover elasticity. Standard errors are clustered at the constituency level. A SUR test of equality between impact of parachuters in low and high crime districts has a p-value of 0.0213 when using bandwidth h and p-value of 0.0523. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

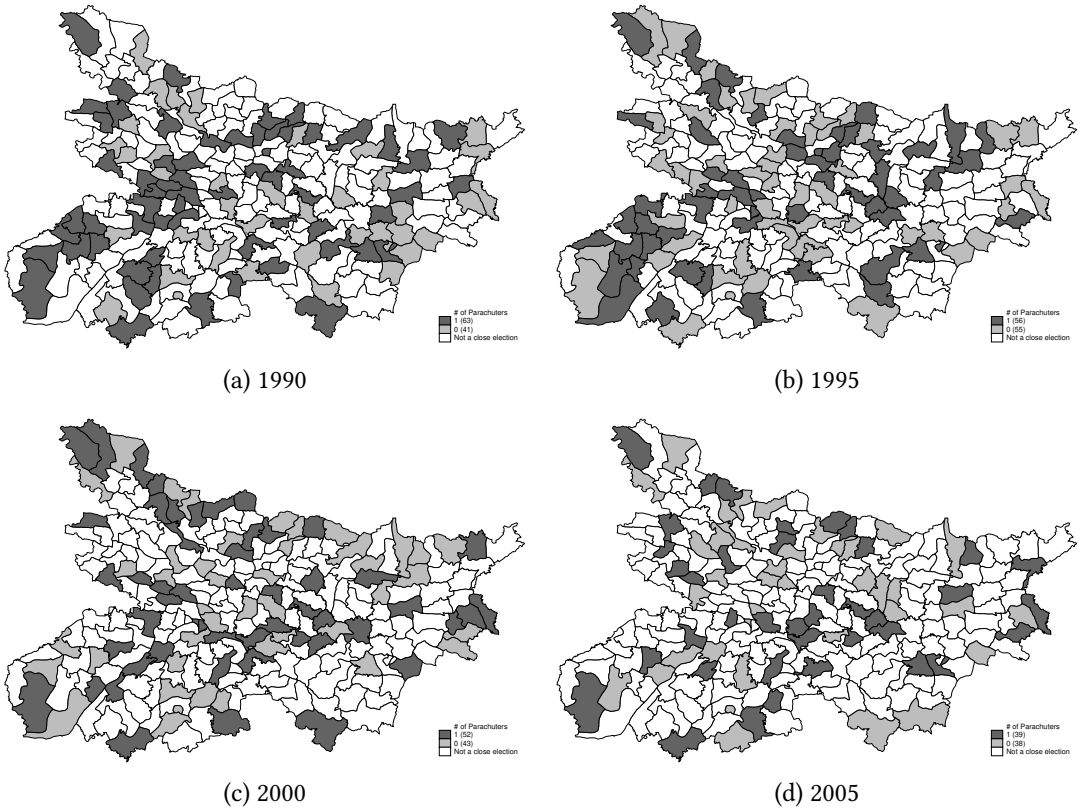
B Figures

Figure 1: McCrary test for the running variables



Note: Figure 1 depicts whether there is a discontinuity in the density of the running variable (parachuter's margin of victory). Discontinuity estimate (log difference in height) for the running variable is -0.113 and the standard error is 0.189.

Figure 2: Parachuters vs climbers in close elections

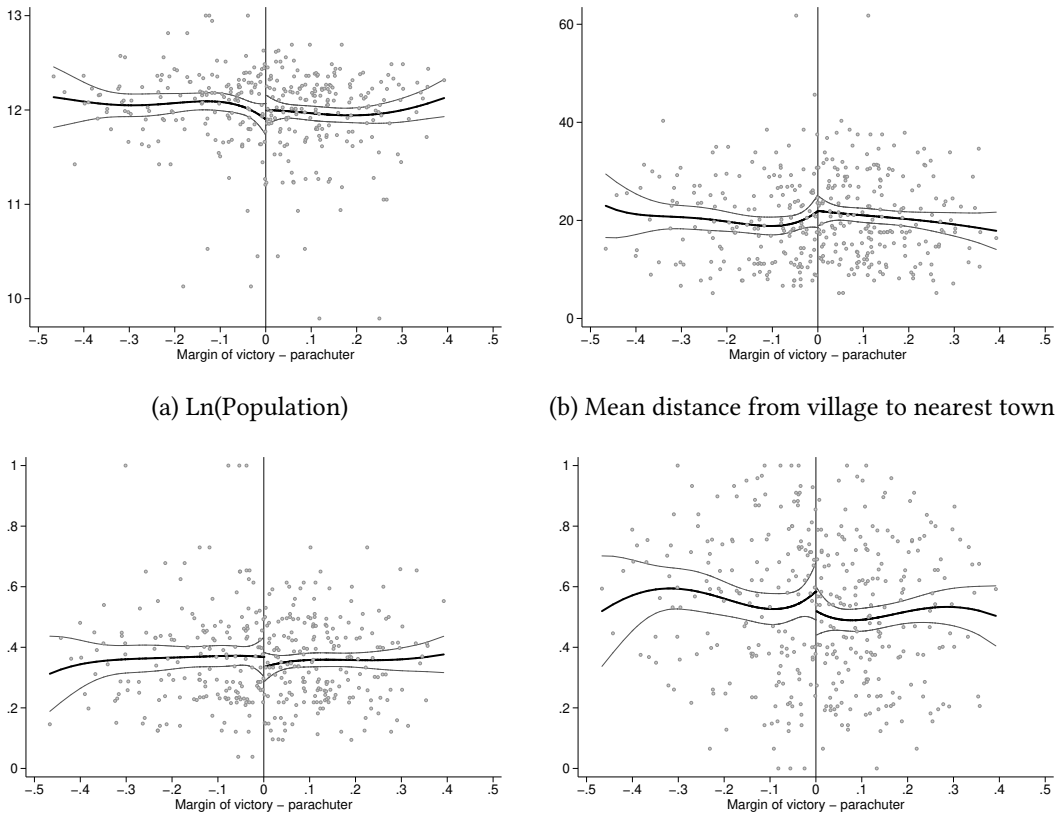


(a) 1990 (b) 1995

(c) 2000 (d) 2005

Note: Figure 2 illustrates the assembly constituencies where parachuter politicians faced off against climber politicians. The constituencies in black and grey refers to those won by parachuters and climbers respectively. White/no fill means that either the election was between two climbers or two parachuters.

Figure 3: Balance checks for initial conditions - 1



(a) Ln(Population)

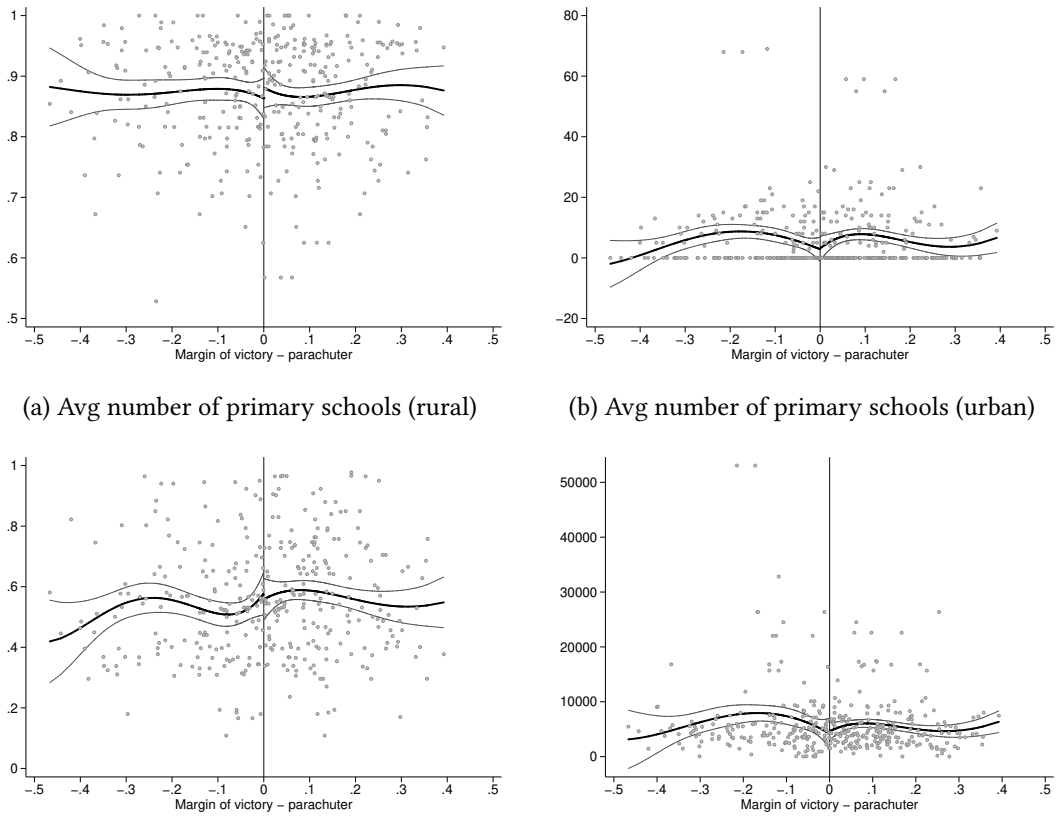
(b) Mean distance from village to nearest town

(c) Share of villages accessible by paved road

(d) Share of villages with electricity connection

Note: Figure 3 compares the initial economic conditions (in 1990) in constituencies where parachuters won (to the right side of 0) with those where they lost (to the left of 0). The forcing variable is the margin of victory of a parachuter candidate. The black line represents a fourth degree polynomial function (in the forcing variable) and the grey lines indicate the 95 percent confidence intervals. The points represent the raw data. Data on baseline economic conditions is derived from Census of India 1991 and Economic Census 1990, as reported by Asher and Novosad (2014).

Figure 4: Balance checks for initial conditions - 2



(a) Avg number of primary schools (rural)

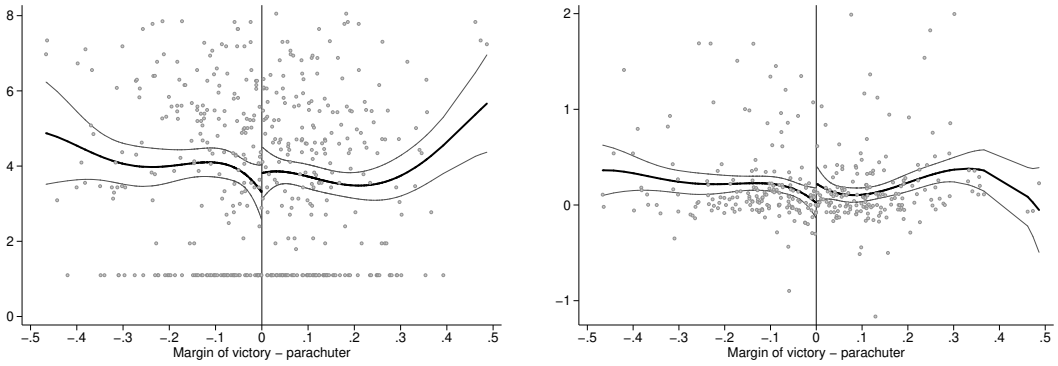
(b) Avg number of primary schools (urban)

(c) Share of arable land irrigated

(d) Firm employment (all)

Note: Figure 4 compares the initial economic conditions (in 1990) in constituencies where parachuters won (to the right side of 0) with those where they lost (to the left of 0). The forcing variable is the margin of victory of a parachuter candidate. The black line represents a fourth degree polynomial function (in the forcing variable) and the grey lines indicate the 95 percent confidence intervals. The points represent the raw data. Data on baseline economic conditions is derived from Census of India 1991 and Economic Census 1990, as reported by Asher and Novosad (2014).

Figure 5: Balance checks for economic covariates

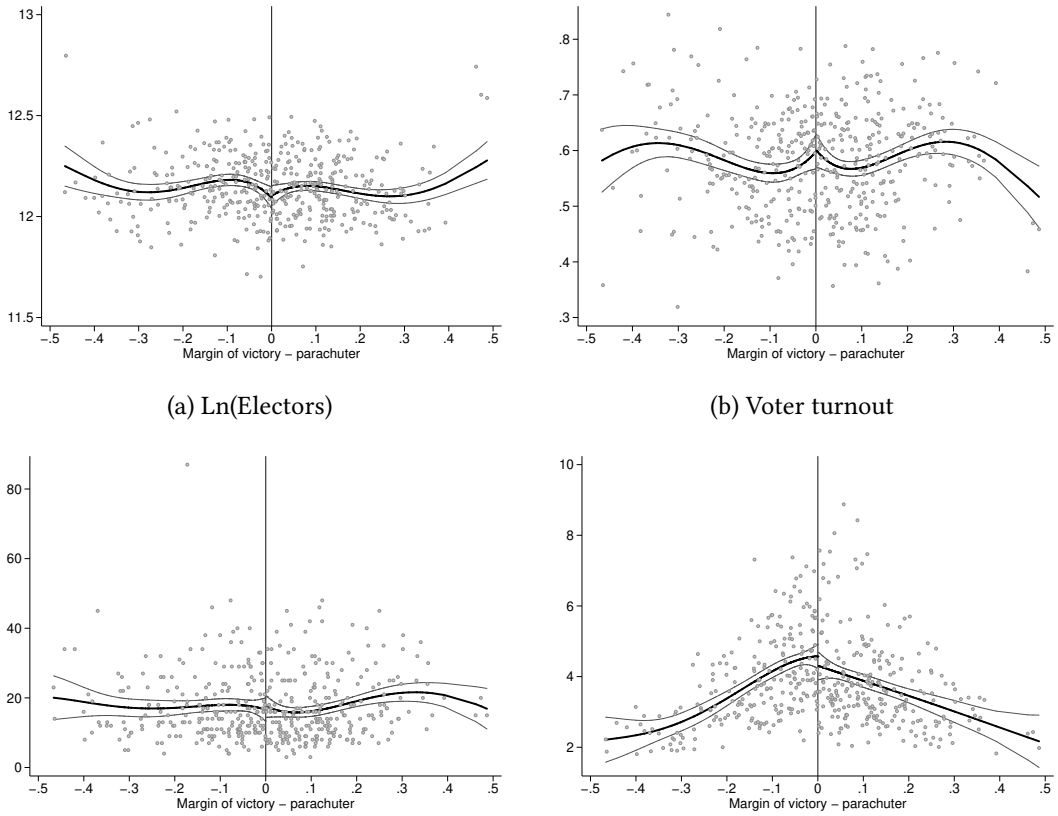


(a) Initial level of ln(luminosity)

(b) Lagged growth rates of lights

Note: Figure 5 depicts the initial levels of ln(luminosity) and lagged growth of lights in constituencies where parachuters won (to the right side of 0) and where they lost (to the left of 0). The forcing variable is the margin of victory of a parachuter candidate. The black line represents a fourth degree polynomial function (in the forcing variable) and the grey lines indicate the 95 percent confidence intervals. The points represent the raw data.

Figure 6: Balance checks for political competition



(a) Ln(Electors)

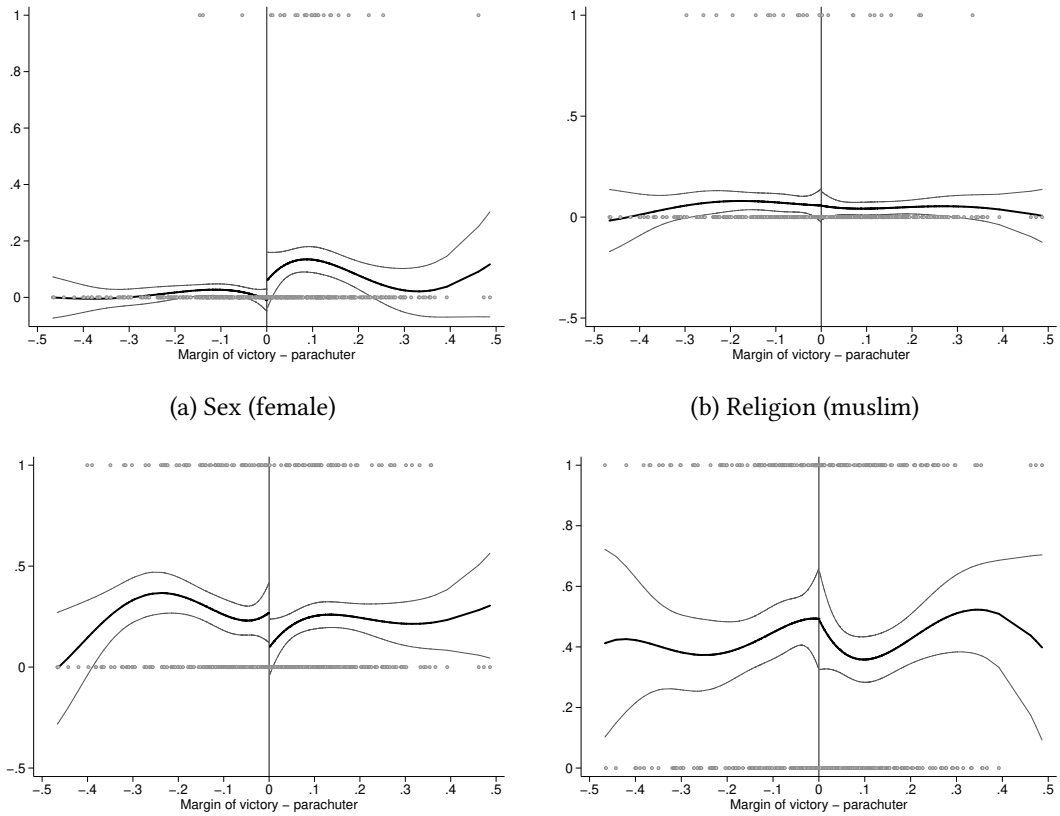
(b) Voter turnout

(c) Number of contesting candidates

(d) Effective number of candidates

Note: Figure 6 illustrates the political competition in constituencies where parachuters won (to the right side of 0) and where they lost (to the left of 0). The forcing variable is the margin of victory of a parachuter candidate. The black line represents a fourth degree polynomial function (in the forcing variable) and the grey lines indicate the 95 percent confidence intervals. The points represent the raw data.

Figure 7: Balance checks for candidate's identity



(a) Sex (female)

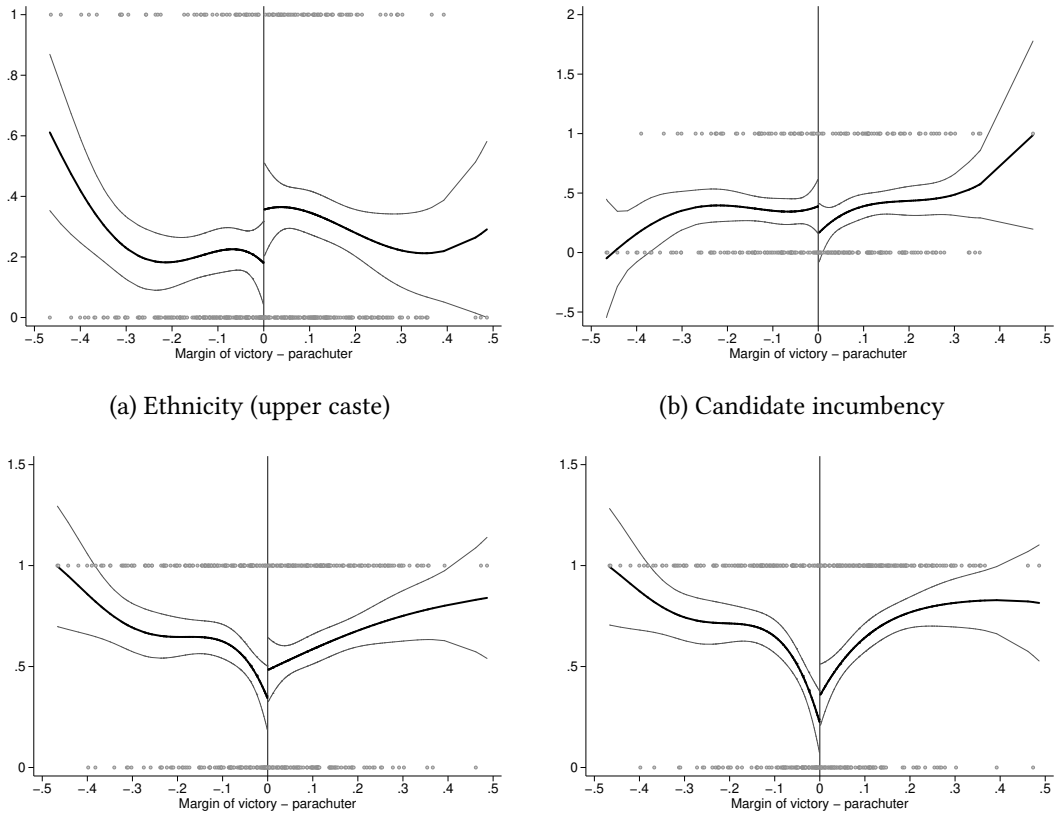
(b) Religion (muslim)

(c) Ethnicity (lower caste)

(d) Ethnicity (middle caste)

Note: Figure 7 illustrate the candidate characteristics of winners in constituencies where parachuters won (to the right side of 0) and where they lost (to the left of 0). The forcing variable is the margin of victory of a parachuter candidate. The black line represents a fourth degree polynomial function (in the forcing variable) and the grey lines indicate the 95 percent confidence intervals. The points represent the raw data. Candidate's identity refer to either sex, religion or ethnicity. Sex of winner is an indicator variable for whether winning candidate is female or not; religion of candidate is an indicator variable for whether candidate is Muslim or not; and ethnicity of candidate is an indicator variable whether candidate is lower caste or not, another indicator variable whether candidate belongs to the middle caste or not and an indicator variable whether candidate is upper caste or not. Lower caste refers to the Dalits (scheduled castes like Paswan, Chamar, Pasi, Musahar, Dhobi, Bhuiya, Rajwar), tribals (scheduled tribes) and extremely backward classes such as Teli, Gangota, Nishad, Kevart, Bind, Nai, Noniya, Dhanuk, Dangi and Mallah; middle caste refers to Yadav, Kushwaha, Kurmi, Koeri, Baniya, Kalwar, Marwari and Kahar; and upper caste refers to Brahmin, Bhumihar, Kayastha and Rajput.

Figure 8: Balance checks for candidate's characteristics



(a) Ethnicity (upper caste)

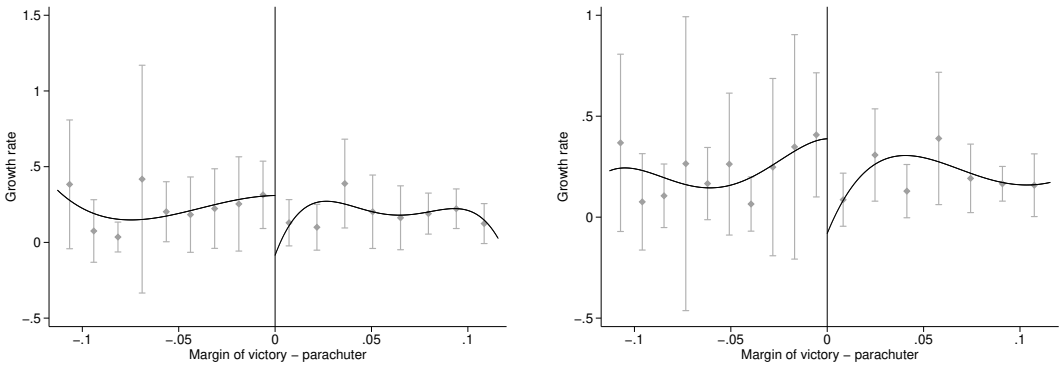
(b) Candidate incumbency

(c) National party

(d) Aligned to ruling party

Note: Figure 8 illustrate the candidate characteristics of winners in constituencies where parachuters won (to the right side of 0) and where they lost (to the left of 0). The forcing variable is the margin of victory of a parachuter candidate. The black line represents a fourth degree polynomial function (in the forcing variable) and the grey lines indicate the 95 percent confidence intervals. The points represent the raw data.

Figure 9: Impact on growth rate of lights

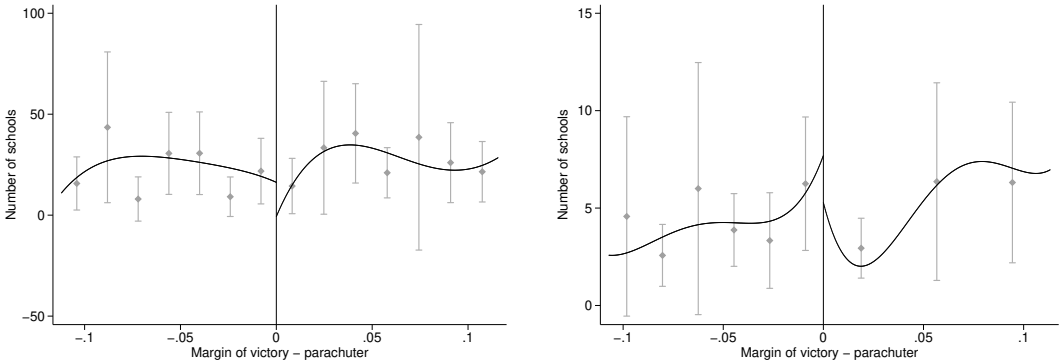


(a) 5 year window

(b) 4 year window

Note: Figure 9 depicts the growth in night lights (as measured by luminosity scores) in constituencies where parachuters won (to the right side of 0) and where they lost (to the left of 0), in the optimal bandwidth. The optimal bandwidth ($h = 0.116$) was calculated according to the algorithm in CCT (2017). The forcing variable is the margin of victory of a parachuter candidate. The black line represents a fourth degree polynomial function (in the forcing variable). The points represent the binned data and the vertical lines indicate the 95 percent confidence intervals. The growth rate of lights is calculated over the entire election cycle (Figure 9a, five-year window) and also over a four-year window (Figure 9b). A four-year election cycle is chosen to avoid biasing the estimate due effects of an election year. The RD estimate in Figure 9a is -0.148 (SE=0.104) and it is not statistically significant at conventional levels. The RD estimate in Figure 9b is -0.215 (SE=0.120) and statistically significant at the 90 percent level. The bias-corrected and robust bias-corrected RD estimates are larger and statistically significant in both cases.

Figure 10: Impact on school construction

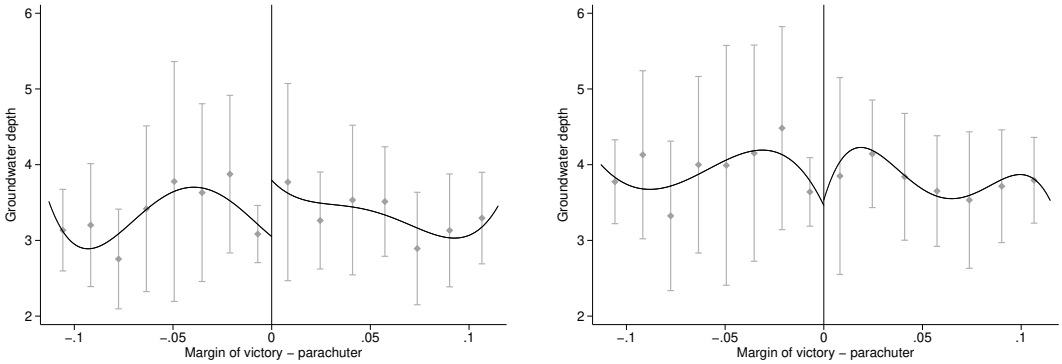


(a) 5 year window

(b) 4 year window

Note: Figure 10 depicts the number of schools established in constituencies where parachuters won (to the right side of 0) and where they lost (to the left of 0), in the optimal bandwidth. The optimal bandwidth ($h = 0.116$) was calculated according to the algorithm in CCT (2017). The forcing variable is the margin of victory of a parachuter candidate. The black line represents a fourth degree polynomial function (in the forcing variable). The points represent the binned data and the vertical lines indicate the 95 percent confidence intervals. School construction is calculated over the entire election cycle (Figure 10a) and also over a four-year window (Figure 10b). A four-year election cycle is chosen to avoid biasing the estimate due effects of an election year. The RD estimate in Figure 10a is 0.339 (SE=8.903) and it is not statistically significant at conventional levels. The RD estimate in Figure 10b is -3.483 (SE=1.548) and statistically significant at the 95 percent level. The bias-corrected and robust bias-corrected RD estimates are negative in both cases, but only statistically significant in case of the latter.

Figure 11: No impact on regulation of technology adoption

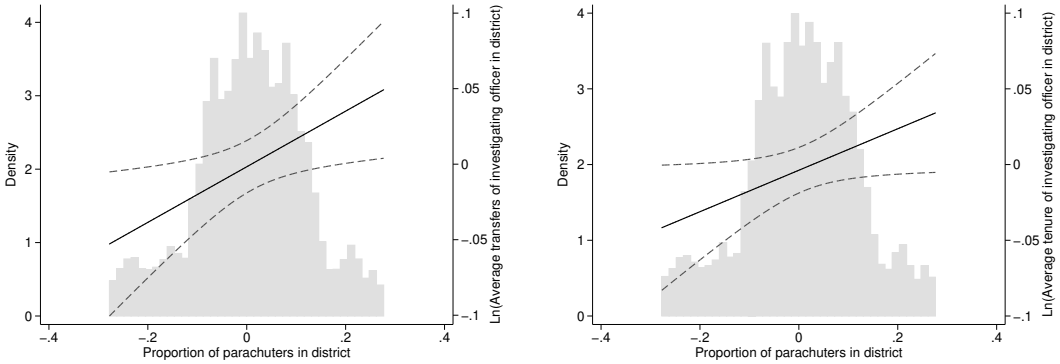


(a) Water table in November

(b) Annual average water table

Note: Figure 11 depicts the groundwater depths (in meters below ground level) in constituencies where parachuters won (to the right side of 0) and where they lost (to the left of 0). The optimal bandwidth ($h = 0.116$) was calculated according to the algorithm in CCT (2017). The forcing variable is the margin of victory of a parachuter candidate. The black line represents a fourth degree polynomial function (in the forcing variable). The points represent the binned data and the vertical lines indicate the 95 percent confidence intervals. Groundwater depths are a proxy of technological adoption and greater adoption of tubewell irrigation should be positively correlated with agrarian dynamism. The water table depths are reported for the month of November and an average through the entire year. Both measures are aggregated over a four-year election cycle (Figure 11a and Figure 11b respectively). The conventional, bias-corrected and robust bias-corrected RD estimates are statistically indistinguishable from zero. Groundwater depths calculated over the entire election cycle, using a 5-year window, are also statistically indistinguishable from zero. (Results not shown.)

Figure 12: Association between bureaucratic turnover and proportion of parachuters



(a) Ln(Number of transfers)

(b) Ln(Duration)

Note: Figure 12 depicts the correlation between turnover of investigating officers and proportion of parachuters in a district. Figure 12a and 12b illustrate the partialled out regression plot ln(average number of transfers) and ln(average tenure of investigating officers) respectively. The linear prediction plot α from the following regression: $y_{dt} = \beta AvgParachuters_{dt} + u_d + v_t + e_{dt}$ where, y_{dt} is either the log of average tenure of investigating officers or the log of the average number of transfer of investigating officers in district d in year t; $AvgParachuters_{dt}$ is the proportion of parachuter politicians in district d in year t; u_d are district fixed effects; v_t are month FE; and e_{dt} is the idiosyncratic error term.

C Online Appendix (Not for Publication)

C.1 Covariate balance

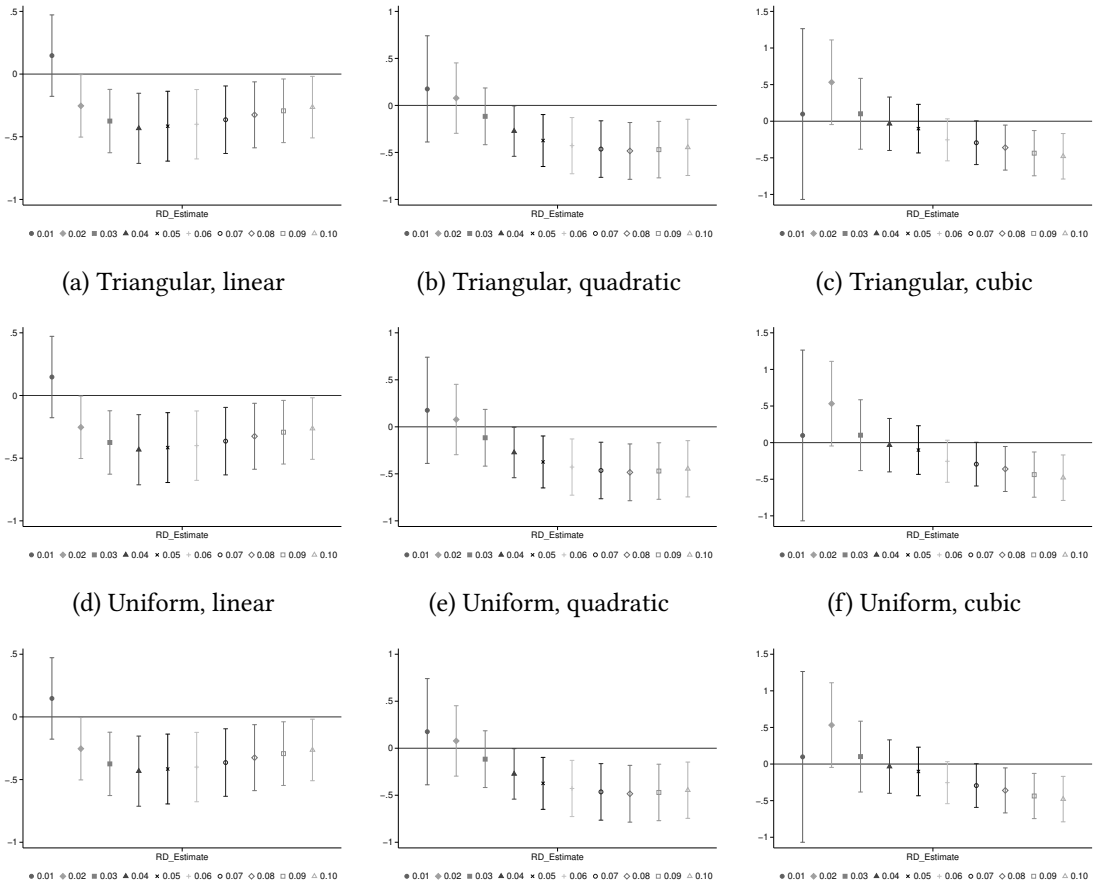
Table 9: Balance check for covariates

Covariate	Bandwidth	Estimate	SE	p-value	N
A. Initial economic conditions					
Ln(Population)	0.15	0.077	0.14	0.43	234
Mean distance from village to nearest town	0.14	0.91	2.9	0.85	230
Share of villages accessible by paved road	0.11	-0.051	0.051	0.24	192
Share of villages with electricity connection	0.12	-0.097	0.079	0.17	195
Firm employment (all)	0.087	-914	1627	0.54	155
Share of arable land irrigated	0.098	-0.0037	0.07	0.75	157
Avg number of primary schools (urban)	0.13	0.011	0.036	0.64	201
Avg number of primary schools (rural)	0.092	0.37	2.8	0.91	153
Initial level of ln(luminosity)	0.11	0.62	0.55	0.17	228
Lagged growth rate of lights	0.097	0.14	0.13	0.22	145
B. Political competition					
Ln(Electors)	0.12	-0.02	0.046	0.51	236
Turnout	0.11	0.012	0.023	0.46	234
Effective candidates	0.16	-0.35	0.38	0.42	309
Total no of candidates	0.17	-1.4	2.6	0.64	312
C. Candidate's identity					
Female	0.1	0.077	0.07	0.33	210
Muslim	0.15	0.0029	0.068	0.81	298
Upper caste	0.11	0.19	0.12	0.11	235
Middle caste	0.12	-0.0069	0.16	0.9	248
Lower caste	0.11	-0.21	0.13	0.05**	212
D. Candidate characteristics					
Incumbent	0.15	-0.18	0.18	0.23	182
Ruling party	0.16	0.13	0.14	0.27	306
National party	0.13	0.11	0.16	0.42	261

Note: Table 9 depicts the RD estimates corresponding to Figure 3, 4, 5, 6, 7 and 8.

C.2 Robustness

Figure 13: Robustness to alternative bandwidths, kernels and local polynomials



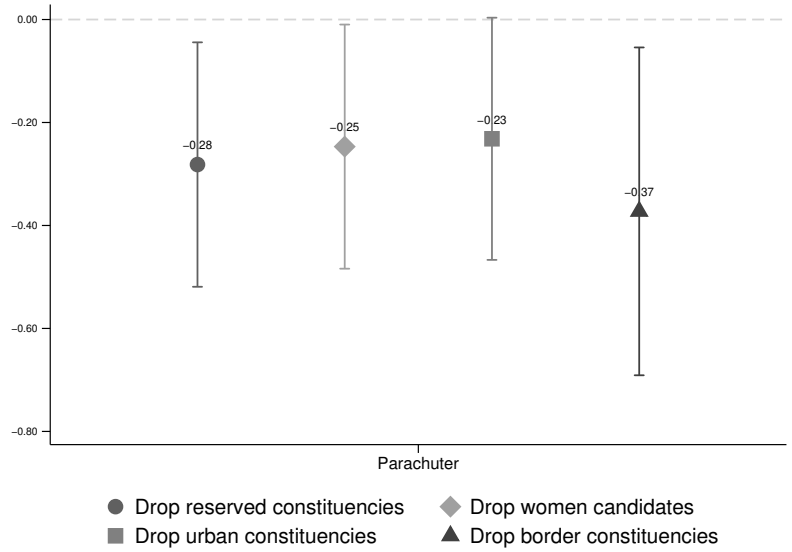
(a) Triangular, linear (b) Triangular, quadratic (c) Triangular, cubic

(d) Uniform, linear (e) Uniform, quadratic (f) Uniform, cubic

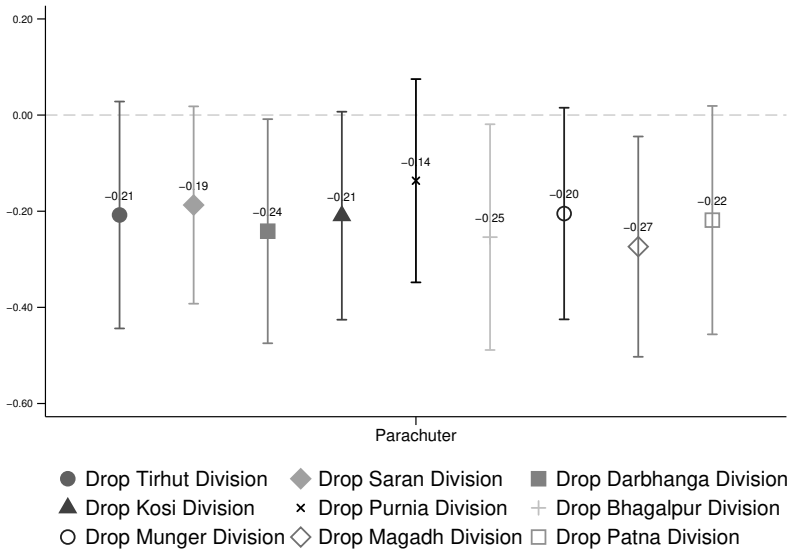
(g) Epanechnikov, linear (h) Epanechnikov, quadratic (i) Epanechnikov, cubic

Note: Figure 13 depicts the sensitivity of the RD estimate to alternative bandwidths, and different choice of kernels and local polynomials. The top panel presents results for the triangular kernel, the middle panel for the uniform kernel and the bottom panel for epanechnikov kernel. The left panel fits a linear regression on either side of the cutoffs, the middle panel fits a local quadratic function and the right panel fits a local cubic polynomial. The outcome variable is growth in night lights (as measured by luminosity scores) for a 4-year election window. The forcing variable is the margin of victory of a parachuter candidate. Each estimate in the graph represents a RD estimate for each of the 10 bandwidths (ranging from 0.01 to 0.10) and the width around the point estimate represent 95 percent confidence intervals.

Figure 14: Robustness to constituency characteristics



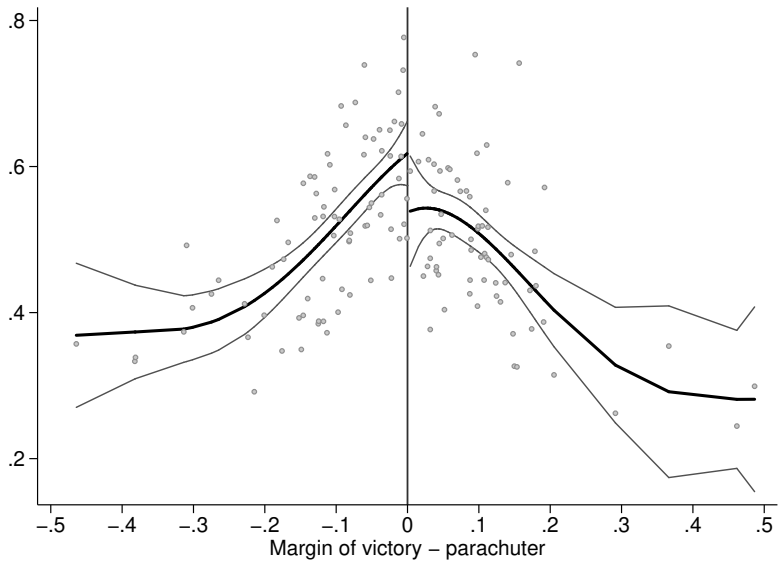
(a) Sensitivity to type of constituency



(b) Sensitivity to regional classifications

Note: Figure 14 depicts the sensitivity of the RD estimate to dropping constituencies based on different characteristics. The top panel (Figure 14a) presents results after dropping reserved constituencies (constituencies where only SC/ST candidates may contest), dropping women constituencies (constituencies where either winner or runner-up is female), dropping urban constituencies (constituencies which have any urban built up area as derived from 2002-2003 MODIS satellite data at 1 km resolution) and dropping border constituencies (constituencies which share borders with Nepal in the north, Uttar Pradesh on the west, Jharkhand to the south and West Bengal to the east). The bottom panel (Figure 14b) drops constituencies falling in the each of the 9 divisions in Bihar. Divisions are an administrative structure above the district. The outcome variable is growth in night lights (as measured by luminosity scores) for a 4-year election window. The forcing variable is the margin of victory of a parachuter candidate. Each estimate in the graph represents a RD estimate calculated for the optimal bandwidth $h = 0.116$ and the width around the point estimate represent 90 percent confidence intervals.

Figure 15: Inequality in vote distribution



Note: Figure 15 depicts the inequality in distribution of votes (as measured by coefficient of variation of within-constituency polling station votes share) in constituencies where parachuters won (to the right side of 0) and where they lost (to the left of 0). The forcing variable is the margin of victory of a parachuter candidate. The black line represents a fourth degree polynomial function (in the forcing variable) and the grey lines indicate the 95 percent confidence intervals. The points represent the raw data.

C.3 Data

Overview

Table 10: Data description

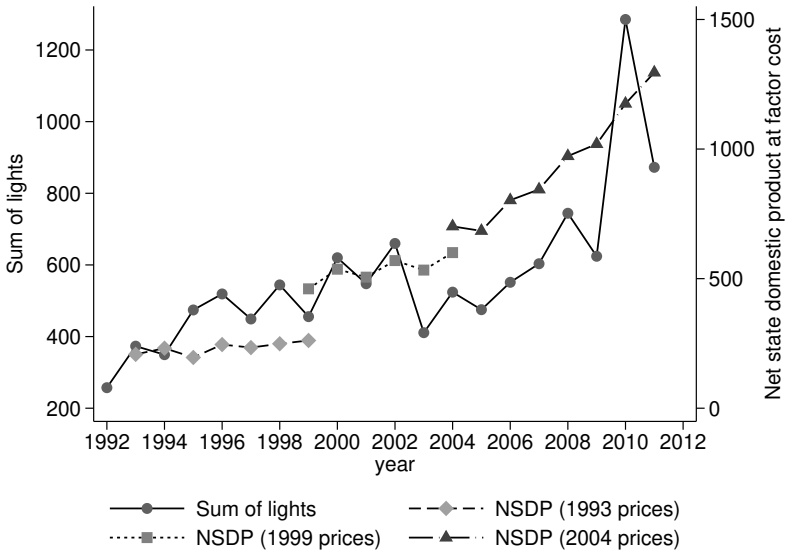
Data	Frequency	Resolution	Source
Night lights	1992-2012, annual	Spatial	DMSP, NOAA
Schools	1990-2013, annual	Spatial	State Education Society
Groundwater	1996-2012, quarterly	Spatial	CGWB
Public amenities	1991, 2001, decadal	Village level	Census of India
Crime	2001-2012, annual	District level	NCRB
Police transfers	1980-2015, monthly	Officer-district level	State Police
Electoral data	Every election cycle	Constituency (AC) level	ECI Statistical Reports
Within-AC vote shares	2006 and 2010	Polling station level	ECI Form 20

Night lights

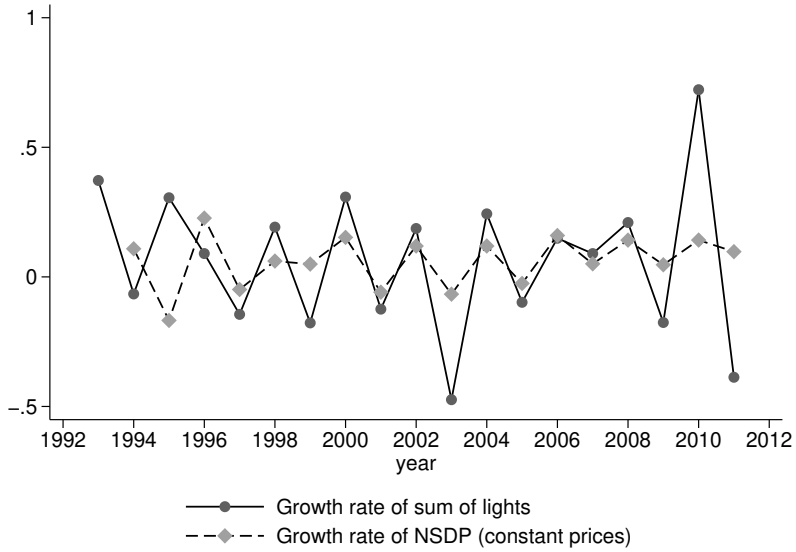
Figure 16: Nighttime lights for India

Note: Figure 16 shows an example of the satellite images recorded by the Defense Meteorological Satellite Program in the National Geophysical Data Center

Figure 17: Validation of lights data



(a) Comparison of levels



(b) Comparisons of growth rates

Note: Figure 17a compares the sum of luminosity score for Bihar with the Net State Domestic Product (NSDP) at factor cost (in Rupees Billion). NSDP for 1993 to 1999 is calculated using 1993 as the base year; NSDP for 1999 to 2004 is calculated using 1999 as the base year; and NSDP for 2004 to 2011 is calculated using 2004 as the base year. Figure 17b compares the growth rate of lights with the chained NSDP time series. The elasticity of NSDP to lights is 0.13 and it is statistically significant ($p < 0.10$). Source: NSDP comes from RBI's Database on Indian Economy (Handbook of Statistics on the Indian Economy, Table No 6). Luminosity scores are derived from DMSP-OLS Nighttime Lights Time Series (Version 4).

Electoral data

The election data from Election Commission of India are used to define political competition at the constituency level. Let $votes^1_{ac,t}$ and $votes^2_{ac,t}$ be the votes received by the winner and first runner-up in assembly constituency ac at time t and $v^{tot}_{ac,t}$ be the the total number of votes. For each AC we observe the following:

- Victory margin

$$VictoryMargin_{ac,t} = \frac{votes^1_{ac,t} - votes^2_{ac,t}}{v^{total}_{ac,t}} \tag{17}$$

- Voter turnout

$$Turnout_{ac,t} = \frac{votes^{total}_{ac,t}}{electors_{ac,t}} \tag{18}$$

- Effective number of candidates

$$ENOC_{ac,t} = \frac{1}{\sum_i (voteshares^i)^2} \tag{19}$$

Polling station level vote shares

In addition to constituency level electoral data, we also observe polling station (PS)-level data. These micro data are only available for the last two elections (2005 and 2010). There were 55,700 and 58,465 PS in 2005 and 2010 respectively and we use this data to construct a measure of 'vote inequality'.

For each candidate $i \in \{1, 2, \ldots C\}$, let v^i_{jt} be the votes secured in PS $j \in \{1, 2, \ldots P\}$ at time $t \in \{2005, 2010\}$. Given $voteshare^i_{jt} = \frac{v^i_{jt}}{\sum_i v^i_{jt}}$, we define the coefficient of variation (CV) of vote share for candidate i as:

$$CV^i_t = \frac{PSsd^i_t}{PSmean^i_t} \tag{20}$$

where, $PSmean^i_t$ is the mean vote share for candidate i

$$PSmean^i_t = \frac{1}{P} \sum_j voteshare^i_{j,t}$$

and $PSsd^i_t$ is the standard deviation of vote share for candidate i

$$PSsd^i_t = \sqrt{\frac{\sum_j (voteshare^i_{j,t} - mean^i_t)^2}{P-1}}$$

This measure captures how spread out the votes received by a candidate within a given constituency are. A higher CV in an election year implies that there was greater inequality in the distribution of

votes. In other words, the votes received by candidates came from a wider distribution of polling stations (instead of just being concentrated in a few ones).

Politician's biographies

Information on how a candidate entered politics was collected by speaking to local journalists and party workers over several years (Dec 2013, Jun-Aug 2014, Dec 2014-Jan 2015 and Nov 2017-Apr 2018). Respondents were asked to describe the candidates' political background, how they entered politics and their explain their entry route/career path. A mini-biography was composed only have speaking to at least two elite respondents. A majority of the biographies (62 percent) were collected from three or more interviews, nearly 30 percent had two sources and 8 percent had only one source. Overall, biographies were collected for over 1,300 politicians who contested in nearly 1,500 election races in the 25 years between 1990 and 2010. The biography was then coded to either one of the following categories:

1. Parachuters
    - Family: if any member (in immediate or extended family) has been an elected member of a public office in the past (either a Member of Parliament, Member of Legislative Assembly or District/local *panchayat* member).
    - Landlord: if belonging to class of landlords (*zamindars*) that were created during British colonial rule.
    - Business: if politician was an industrialist or contractor or owned any business before joining politics. Typical examples of business interests in Bihar are transporter/bus owner/truck owner, owner of gas agency, PDS dealer[6], brick kilns, traders, real estate, medical shop and factory owner.
    - Inducted: if politician was a famous actor, singer, cricketer, journalist, bureaucrat and lawyer
2. Climbers
    - Strongman: musclemen or criminally accused/indicted politician
    - Grassroots: started political career at the village/block/district level (and is not a parachuter). Local elected representatives could be mnicipal corporator, district panchayat/*Zila Parishad* member, Block panchayat/*Panchayat samiti* or village panchayat/*mukhiya* .
    - Social worker: belonging to any non-formal social movement like anti-caste struggle, environmental movements etc. The primary social movements in the Bihar context were the JP movement and cooperative movement.

[6]The Public Distribution System (PDS) is India's flagship food subsidy program and PDS dealers are shopkeepers who are responsible for distribution of the foodgrains to eligible households. PDS dealers have a local monopoly over the sale of foodgrains and are considered part of the local economic elite.

- Cadre: rose up the party ranks/party worker. Typically, ideologically committed political parties have a dedicated cadre (communist or RSS) but it is not unusual to find cadres for Congress, RJD and even the JDU, to some extent.
- Student politics: started politics at the university/college, such as NSUI, ABVP, SFI, AISA etc.
- Union: part of labour or trade unions
- Naxal: involved in the Naxalite struggle
- Freedom fighter: participated in the independence movement (before 1947)

In case of multiple entry routes, family and being a parachuter overruled. The following examples illustrate this (biographies are in quotes and the category is mentioned in square brackets):

- Nitish Mishra: "He is son of former Bihar chief minister Jagannath Mishra, who in turn is younger brother of late railway minister LN Mishra, the Brahmin face of Congress during Indira Gandhi's rule. Nitish Mishra's cousin, Vijay Kumar Mishra, is also a MLA." [Family - multiple connections]
- Abdul Jalil Mastan: "Seven-time MLA, two-time MP and former Union Minister of state for Home, Abdul Jalil Mastan has always won the assembly elections on INC ticket. (He quit INC in 2004 to contest the Kishanganj PC on SP ticket.) An alleged criminal, he is known to have committed the first road robbery in Purnea. Mastan, a Surjapuri Muslim, is a graduate from Purnea college. His father was a farmer." [Strongman]
- Annu Shukla: "JD(U) MLA is the wife of Munna Shukla who is serving a life sentence in Muzaffarpur jail for masterminding the murder of RJD minister Brijnihari Prasad (who allegedly killed his elder brother and underworld don of north Bihar Kaushalendra Shukla alias Chhotan Shukla)" [Strongman relative]