Parachuters vs. Climbers

Economic Consequences of Barriers to Political Entry in a Democracy

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June 25, 2018

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Motivation

Context and Data

Conceptual Framework

Identification Strategy

Findings

Mechanisms
Motivation
Elites and *de facto* power

- How is *de facto* power operationalized?
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  • Literature points to role of historical circumstances (Ager, 2013; Dell, 2010; Banerjee and Iyer, 2005)

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• I study consequences of elite formation by focusing on one channel: candidate screening by political parties

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Example: same ascriptive identities but different backgrounds

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Mayawati
Example: same ascriptive identities but different backgrounds

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- Same sex, same religion, same ethnicity
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- But two very different entry routes
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1. Parachuters lead to lower growth in close elections
Preview of findings

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2. Leader’s entry route into politics is perhaps more important than ascriptive identities
3. Suggestive evidence that revenue extraction (operating via bureaucratic control) could be the underlying mechanism
   - Effect neither driven by regulation of technology adoption nor factor price manipulation
Context and Data
Context: Bihar (‘heart of India’)

Figure 1: Bihar, a state in North India
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**Background**

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- At the forefront of the ‘second democratic upsurge’ and ‘rise of plebeians’
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- At the forefront of the ‘second democratic upsurge’ and ‘rise of plebeians’
- Unit of analysis: 243 state-legislator constituencies
- Study period: 1990-2015
Why state legislators?

- Federal set-up in India: there are over 4,000 state-level legislators across the country
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- States have jurisdiction over:
  - Full control: Police, agriculture, irrigation, labor markets, land rights, money lending, and retail taxes
  - Partial control: Education, health, forest, trade unions, marriage and succession
- Consensus among Indian political scientists that state legislators play a critical role (Chhibber et al., 2004; Oldenburg, 2018)
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Economic outcomes data: growth rate of luminosity score

Nighttime lights

- Satellite images recorded by NGDC at a 30 arc-second grid resolution between 1992 and 2012

Figure 2: Lights in 2012
Economic outcomes data: growth rate of luminosity score

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- Economic growth is measured by difference in $\ln(\text{luminosity scores per 100,000 voters})$ aggregated to the constituency level over the election cycle

**Figure 2:** Lights in 2012
Nighttime lights

- Satellite images recorded by NGDC at a 30 arc-second grid resolution between 1992 and 2012
- Economic growth is measured by difference in ln(luminosity scores per 100,000 voters) aggregated to the constituency level over the election cycle
- State domestic product to lights elasticity for Bihar = 0.13
Additional data

- Redistribution (school construction)
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- Technology adoption (groundwater depths)
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- Legislator’s traits (age, education, experience)
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Parachuters

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  - White collar occupations

**Climbers**

- Activist
- Local representative
- Political worker
- Student politics
- Strongman/muscleman
- Working class occupations
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How might parachuters impact growth?

Positively:
- Able to channel more resources to their constituencies since they are well connected/networked.
- Avoid time/dynamic inconsistency problems by planning for the long run.
- Exert more effort because reputation is at stake.

Negatively:
- Channel less resources because of adverse selection or vote buying.
- Don't value public goods as therefore under-invest in their provision.
- Exert less effort as motivated by rent seeking/corruption.
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Identification Strategy
Identification Strategy: Regression Discontinuity Design

\[ \text{Margin of Victory} \] _c, t = \text{Votes Parachuter} _c, t - \text{Votes Climber} _c, t / \text{Total Votes} _c, t (1) \]

- If \( \text{Margin of Victory} _c, t > 0 \) \( \Rightarrow \) Parachuter won
- If \( \text{Margin of Victory} _c, t < 0 \) \( \Rightarrow \) Parachuter lost/climber won

**Constituency A**
- Parachuter: 36,000 votes
- Climber: 35,725 votes
- Margin of victory: +0.38%

**Constituency B**
- Parachuter: 36,250 votes
- Climber: 36,500 votes
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Local linear regression

\[ y_{c,t} = \beta_1 + \beta_2 1(MarginOfVictory_{c,t} > 0) + \beta_3 MarginOfVictory_{c,t} \]
\[ + \beta_4 1(MarginOfVictory_{c,t} > 0) \times MarginOfVictory_{c,t} \]
\[ + Z_{c,t} + e_{c,t} \]  

(2)

where,

- \( \beta_2 \) is the coefficient of interest (impact of parachuters)
- \( y_{c,t} \) is an outcome of interest (growth/redistribution) in constituency \( c \) at time \( t \)
- \( Z_{c,t} \) are constituency- or candidate-level controls
- Standard errors \( e_{c,t} \) are clustered at the constituency level
Empirical strategy: Polynomial control function

\[ y_{c,t} = \beta_1 + \beta_2 1(MarginOfVictory_{c,t} > 0) + f(MarginOfVictory) + 1(MarginOfVictory_{c,t} > 0) \times g(MarginOfVictory) + Z_{c,t} + e_{c,t} \]  

(3)

where,

- \( f(\cdot) \) and \( g(\cdot) \) are quadratic or cubic polynomial functions.
Findings
Parachuter vs climber close elections

1990

1995

2000

2005

2010
Findings

Covariate balance
Covariate balance: Economic conditions

- Covariates: Economic conditions
- Margins of victory vs. parachuter
- Initial level of ln(luminosity)
- Lagged growth rates of lights
- Ln(Population)
- Share of villages with electricity connection
Covariate balance: Political competition

- Ln(Electors)
- Voter turnout
- Total contestants
- Effective number of candidates
Covariate balance: Candidate’s identity

Sex (female)  Religion (Muslim)

Ethnicity (lower caste)  Ethnicity (middle caste)
Covariate balance: Candidate’s characteristics

Ethnicity (upper caste)

Candidate incumbency

National party

Aligned to ruling party
Findings

Economic impacts
Impact of parachuters on growth (5-year window)

![Graph showing the impact of parachuters on growth over a 5-year window. The x-axis represents the margin of victory for parachuters, ranging from -0.1 to 0.1. The y-axis represents the growth rate, ranging from -0.2 to 0.8. The graph includes error bars and a curved line indicating the trend.](image-url)
Impact of parachuters on growth (4-year window)

Growth rate vs Margin of victory – parachuter

RD estimates
Robustness

• Disaggregated estimates by politician's term shows that effect is coming from 3rd and 4th year in office.

Robustness 1

• Findings are strongest when the executive is at its weakest.

Robustness 2

• Robust to alternative bandwidths, kernels and polynomial control functions.

Robustness 3

• Results not driven by:

Robustness 4

• Urban or border areas

Robustness 5

• Nor any significant regional heterogeneity

Robustness 6

• Dropping individual entry routes iteratively doesn't change sign of point estimate.

Robustness 7

• Parachuters also lead to lower school construction.
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- Parachuters also lead to lower school construction [Robustness 7]
Findings

Ascriptive identity vs background
## Adding covariates

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Note: constituency level controls are effective number of candidates and voter turnout; candidate level controls are dummies for sex, religion, caste and party affiliation of candidate
Adding covariates

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Note: constituency level controls are effective number of candidates and voter turnout; candidate level controls are dummies for sex, religion, caste and party affiliation of candidate.
Robustness to restricting candidate pool

Parachuter

- Drop none
- Drop women candidates
- Drop reserved constituencies
- Drop lower caste candidates
- Drop middle caste candidates
- Drop upper caste candidates
- Drop muslim candidates
Barriers to political entry and post-colonial elite persistence have perverse economic consequences, especially when executive constraints are weak.
Summary so far

- Barriers to political entry and post-colonial elite persistence have perverse economic consequences, especially when executive constraints are weak.

- Magnitude of effect is meaningful: estimates of GDP-to-night-lights elasticity show that electing parachuters leads to 0.2 percentage point lower GDP growth per year compared to constituencies where climbers are elected.
Summary so far

- Barriers to political entry and post-colonial elite persistence have perverse economic consequences, especially when executive constraints are weak.
- Magnitude of effect is meaningful: estimates of GDP-to-night-lights elasticity show that electing parachuters leads to 0.2 percentage point lower GDP growth per year compared to constituencies where climbers are elected.
- Leader’s entry route is a significant feature of political selection – perhaps more important than the role conventionally assigned to ascriptive identities such as sex, religion and caste.
Mechanisms
How might parachuters lead to lower growth?

1. Regulation of technology adoption
   - Elites would raise barriers to tech. adoption to block progress for the masses (Kuznets et al., 1968; Mokyr, 1992; Krusell and Rios-Rull, 1996; Parente and Prescott, 1999)

2. Factor price manipulation
   - Elites would like to keep wages low ⇒ greater profits (Acemoglu, 2006)

3. Corruption and revenue extraction
   - Elites set distortionary taxes to transfer resources to themselves (Acemoglu, 2006)
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Mechanisms

Regulation of Technology Adoption
Outcome: Irrigation investments (a proxy for tech. adoption)

Depth of water tables

- Irrigation key to increase agricultural productivity
- Use depth below ground level to proxy for investments in tube wells/mechanized pumps
- Lower water tables suggests agrarian dynamism (greater technology adoption)

Figure 3: Groundwater depth in Rabi/lean season (November) 1996-2012
No impact on regulation of technology adoption

5-year window

4-year window
Mechanisms

Factor Price Manipulation
Wages not lower in districts with higher parachuters

Male wages

Female wages
Mechanisms

Revenue Extraction
Bureaucratic control via ‘transfers and posting’ is a major source of revenue of rent seeking in which MLAs can play an important role (Ghosh, 1997; Saksena, 1993)
Crime and corruption

- Bureaucratic control via ‘transfers and posting’ is a major source of revenue of rent seeking in which MLAs can play an important role (Ghosh, 1997; Saksena, 1993)

- I analyzed data on around 100,000 transfers of non-IAS police officers (these investigating offers form backbone of policing system)
Bureaucratic control via ‘transfers and posting’ is a major source of revenue of rent seeking in which MLAs can play an important role (Ghosh, 1997; Saksena, 1993).

I analyzed data on around 100,000 transfers of non-IAS police officers (these investigating offers form backbone of policing system).

Hypothesis: Misallocation of police resources by elites ⇒ reduced efficiency of investigation ⇒ increased crime rates ⇒ depressed growth.
Parachuters interfere in bureaucratic reassignment decisions

Ln(transfers)

Ln(duration)
## Police turnover-crime elasticity

<table>
<thead>
<tr>
<th></th>
<th>Ln(All crime)</th>
<th>Ln(Economic crime)</th>
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<td></td>
<td>(1)</td>
<td>(2)</td>
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<tr>
<td>Year FE</td>
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<td>Yes</td>
</tr>
<tr>
<td>Zone × year trends</td>
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<td>Yes</td>
</tr>
<tr>
<td>Range × year trends</td>
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</table>

Note: Table presents results from the following regression in a district-year panel:

\[
\ln(dur_{\text{duration}}_{dt}) = \beta \ln(crime)_{dt} + u_d + f(t) + e_{dt}
\]

where, \(\ln(dur_{\text{duration}})_{dt}\) 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 turnover-crime elasticity

<table>
<thead>
<tr>
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<table>
<thead>
<tr>
<th></th>
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<td>(0.16)**</td>
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Sample restriction:
- Economic crime: Low High

Note: Col (1) and col (3) restrict the sample to districts which have below median crime rates, whereas col (2) and col (4) restrict the sample to districts above median crime rates.
## Crime, ↓ growth

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<td>(4) -0.45 (0.16)***</td>
</tr>
<tr>
<td><strong>N</strong></td>
<td>116</td>
<td>63</td>
</tr>
<tr>
<td><strong>Mean</strong></td>
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</table>
| Note: Col (1) and col (3) restrict the sample to districts which have below median crime rates, whereas col (2) and col (4) restrict the sample to districts above median crime rates.
Discussion

- Suggestive evidence that misallocation of bureaucratic resources underpins politician-growth link
• Suggestive evidence that misallocation of bureaucratic resources underpins politician-growth link

• Do climbers perform better because they are better informed and parachuters perform poorly because they incompetent?
• Suggestive evidence that misallocation of bureaucratic resources underpins politician-growth link

• Do climbers perform better because they are better informed and parachuters perform poorly because they incompetent?

• Or, are vested interests of the elite responsible for corruption?
Discussion

- Suggestive evidence that misallocation of bureaucratic resources underpins politician-growth link
- Do climbers perform better because they are better informed and parachuters perform poorly because they incompetent?
- Or, are vested interests of the elite responsible for corruption?
- Difficult to untie these two competing explanations but perhaps examining heterogeneity by candidate’s traits might provide some hints?
### Panel A: Age

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<table>
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Sample restriction: Young Old Young Old

Note: Col (1) and col (3) restrict the sample to legislators with below median age, whereas col (2) and col (4) restrict the sample to legislators with above median age.
### Panel A: Age

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<tr>
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<td>(0.13)</td>
<td>(0.19)*</td>
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</tbody>
</table>

| N           | 76  | 77  | 47  | 41  |
| Mean        | 0.26 | 0.20 | 0.24 | 0.17 |
| Sample restriction | Young | Old | Young | Old |

Note: Col (1) and col (3) restrict the sample to legislators with below median age, whereas col (2) and col (4) restrict the sample to legislators with above median age.
### Panel B: Education

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<td>0.23</td>
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## Ability or vested interests?

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<td>Exp.</td>
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Note: Col (1) and col (3) restrict the sample to candidates with below median political experience, whereas col (2) and col (4) restrict the sample to legislators with above median political experience.


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<td>0.20</td>
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Conclusion

- Results underline perverse consequences of persistence of a ‘homegrown’ elite in a vibrant democracy
Conclusion

- Results underline perverse consequences of persistence of a ‘homegrown’ elite in a vibrant democracy
- ‘Blame’ falls on political parties, where the lack of intra-party democracy, non-meritocratic promotion and weak organization leave the door open for elite capture
• Results underline perverse consequences of persistence of a ‘homegrown’ elite in a vibrant democracy
• ‘Blame’ falls on political parties, where the lack of intra-party democracy, non-meritocratic promotion and weak organization leave the door open for elite capture
• Understanding politician-bureaucratic linkages is an important avenue for future research
Questions?
aaditya@gwu.edu
### Impact of parachuters on growth in close elections

<table>
<thead>
<tr>
<th></th>
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<th>Linear (2)</th>
<th>Polynomial: quadratic (3)</th>
<th>Polynomial: quadratic (4)</th>
<th>Polynomial: cubic (5)</th>
<th>Polynomial: cubic (6)</th>
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<td>-0.41</td>
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</tr>
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<td>(0.09)</td>
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<td>0.21</td>
<td>0.21</td>
<td>0.21</td>
</tr>
</tbody>
</table>

Note: Table 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 (4-year window) and winsorized at the 5th and 95th percentiles. 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 ($h = 0.11$) was calculated according to the algorithm in CCT (2017). Standard errors are clustered at the constituency level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. 
Impact on lights, by time in office

<table>
<thead>
<tr>
<th></th>
<th>Term 1</th>
<th>Term 2</th>
<th>Term 3</th>
<th>Term 4</th>
<th>Term 5</th>
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<tbody>
<tr>
<td><strong>A. Bandwidth = h/4</strong></td>
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<tr>
<td>Parachuter</td>
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<td>-0.19</td>
<td>-0.28</td>
<td>-0.71</td>
<td>0.27</td>
</tr>
<tr>
<td></td>
<td>(0.23)</td>
<td>(0.20)</td>
<td>(0.54)</td>
<td>(0.40)*</td>
<td>(0.23)</td>
</tr>
<tr>
<td>N</td>
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<td>44</td>
<td>53</td>
<td>53</td>
<td>53</td>
</tr>
<tr>
<td>Mean</td>
<td>-.026</td>
<td>.25</td>
<td>.086</td>
<td>.32</td>
<td>.14</td>
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</tbody>
</table>

<table>
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<th>Term 3</th>
<th>Term 4</th>
<th>Term 5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>B. Bandwidth = h/2</strong></td>
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<tr>
<td>Parachuter</td>
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<td>0.10</td>
<td>-0.35</td>
<td>-0.64</td>
<td>0.24</td>
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<tr>
<td></td>
<td>(0.19)</td>
<td>(0.19)</td>
<td>(0.44)</td>
<td>(0.33)*</td>
<td>(0.20)</td>
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<tr>
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<td>81</td>
<td>104</td>
<td>104</td>
<td>104</td>
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<tr>
<td>Mean</td>
<td>-.041</td>
<td>.27</td>
<td>.075</td>
<td>.32</td>
<td>.13</td>
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Robustness
## Heterogeneity by strength of executive

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<th>Bandwidth: $h/2$</th>
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<tbody>
<tr>
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<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
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<tr>
<td>Parachuter</td>
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<td>0.11</td>
<td>-0.34</td>
<td>-0.15</td>
</tr>
<tr>
<td></td>
<td>(0.11)**</td>
<td>(0.10)</td>
<td>(0.15)**</td>
<td>(0.16)</td>
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<tr>
<td>N</td>
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<td>92</td>
<td>75</td>
<td>45</td>
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<tr>
<td>Mean</td>
<td>0.16</td>
<td>0.29</td>
<td>0.17</td>
<td>0.27</td>
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</table>

**Sample restriction:**

- Col (1) and col (3) restrict the sample to years with weak executive constraints (1990-2005).
- Col (2) and col (4) restrict the sample to years when executive was strong (2005-15).

Note: Col (1) and col (3) restrict the sample to years with weak executive constraints (1990-2005), whereas col (2) and col (4) restrict the sample to years when executive was strong (2005-15).
Outcome: Variability in vote %

Disaggregated vote shares

- Use micro data to look at distribution of vote shares across polling stations
- Define coefficient of variation of votes as a measures of within-constituency ‘vote inequality’
- Higher inequality/variability suggests vote buying

Figure 4: Polling station level data
Figure 5: Inequality in vote distribution within a constituency.
Figure 6: Dropping constituency/candidates with peculiar characteristics

-0.16
-0.16
-0.30
-0.11
-0.50
-0.40
-0.30
-0.20
-0.10
0.00
Parachuter
Drop none Drop urban constituencies
Drop border constituencies Drop partial election cycles (1990 and 2010)

Robustness
Figure 7: Dropping administrative divisions iteratively

![Graph showing the effects of dropping different administrative divisions iteratively. The x-axis represents Parachuter, and the y-axis shows the change in a metric. Different markers represent the division dropped, with legends indicating the specific divisions (e.g., Drop Tirhut Division). The y-values range from -0.40 to 0.10.]

- Drop Tirhut Division
- Drop Saran Division
- Drop Darbhanga Division
- Drop Kosi Division
- Drop Purnia Division
- Drop Bhagalpur Division
- Drop Munger Division
- Drop Magadh Division
- Drop Patna Division

Robustness
Figure 8: Robustness for impact of parachuters on growth for alternative definitions
Note: Figure depicts whether there is a discontinuity in the density of the running variable (margin of victory).

Discontinuity estimate (log difference in height) for ‘parachuter’ running variable is -.077 and the standard error is .20. This implies that there is no sorting and the cutoff cannot be manipulated.


