FLS 6415 - Causal Inference for the Political Economy of Development

Week 7 - Incumbency Power & Regression Discontinuities

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Regression Discontinuities

- Natural Experiments
  - As always, we need some 'as-if' random variation in assignment to treatment to get plausible counterfactuals
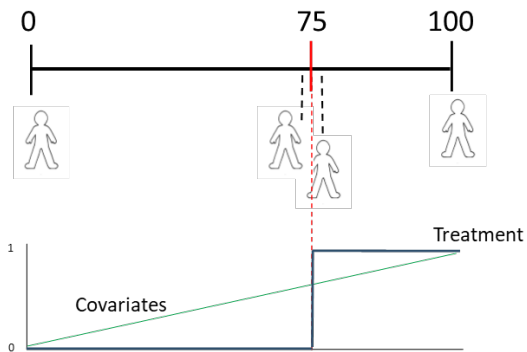
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  - As always, we need some 'as-if' random variation in assignment to treatment to get plausible counterfactuals
  - Regression discontinuities take advantage of social rules that **treat similar people differently**
  - Specifically, similar people with slightly different 'scores' are assigned to treatment/control

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   ▸ So we can compare them directly

- Example thresholds:
    - Exam cutoffs
    - Age cutoffs
    - Policy eligibility rules
    - Close elections
    - Adminsitrative boundaries

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    - ▶ **Outcome,** Y_i**:** Any subsequent outcome you have measured

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- ▶ Regression Discontinuity Assumptions:
  - ▶ Potential outcomes vary continuously (are independent of treatment) at the threshold
  - ▶ Units cannot precisely control their score and sort either side of the threshold
  - ▶ The threshold is not chosen strategically
  - ▶ No compound treatments

▶ Thresholds more likely to be exogenous if:

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- ► Thresholds more likely to be exogenous if:
  - ► Units are not aware of the threshold
  - ► The threshold is decided after units make choices
  - ► The running variable is hard to manipulate precisely
- ► We need qualitative evidence to support these assumptions

- We can check for sorting with a density test
- If units are bunched just above the threshold, this suggests manipulation
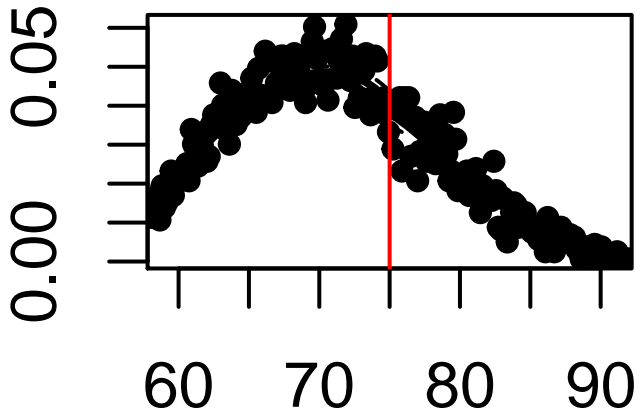
- Three Regression Discontinuity Methodologies:
  1. **Difference-in-means:** Define a small window either side of the threshold and compare average outcomes in this window
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  2. **'Parametric' regression discontinuity:** Uses all the data and estimates:

$$Y_i = \alpha + \beta_1 Running\_Variable_i + \beta_2 Treatment_i + \epsilon_i$$

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    3. **Combined approach:** Focus on values close to the threshold, but use a (local) regression
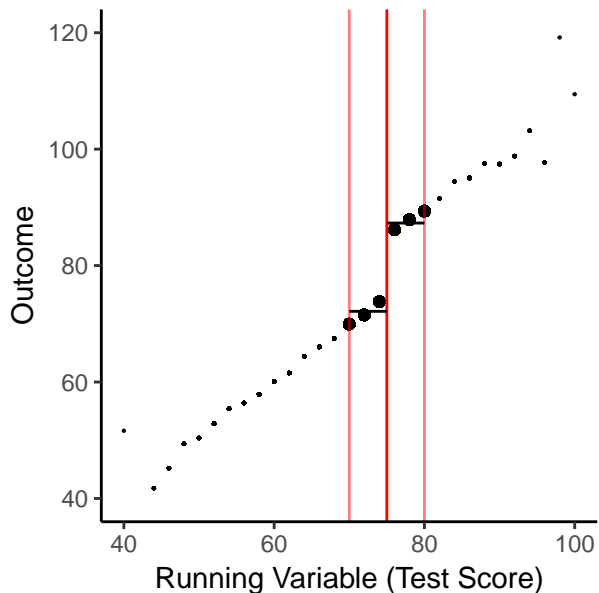   - ▶ What bandwidth around the threshold do we use?
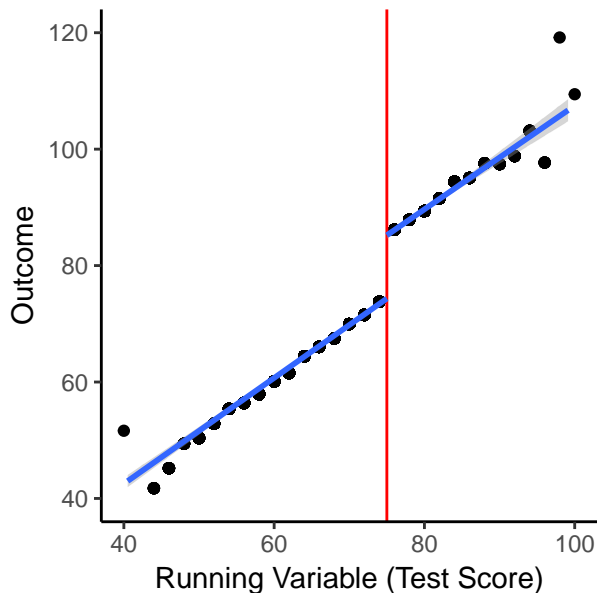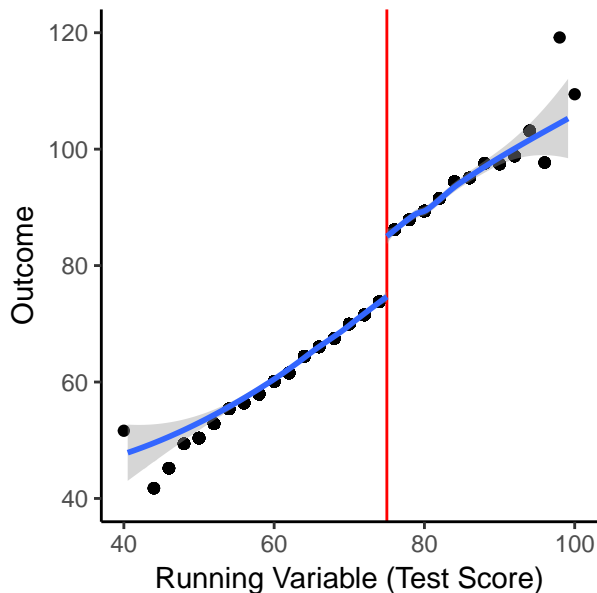
Raw Data
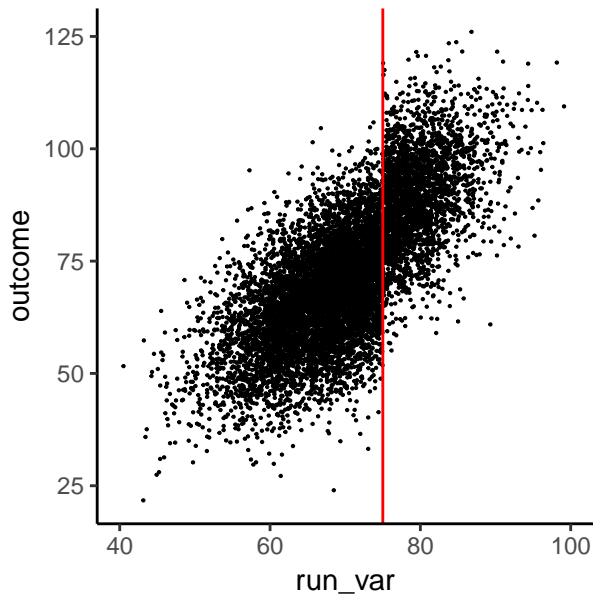
'Binned' Data
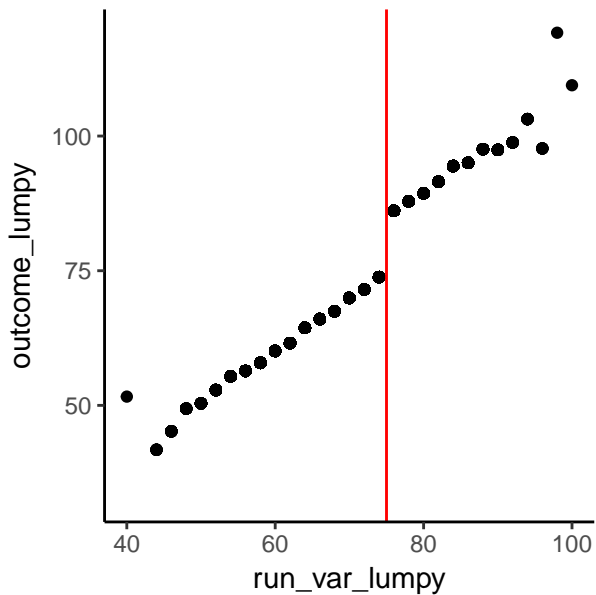
1. Difference-in-Means

2a. Parametric Regression - Linear

2b. Parametric Regression - Non-linear

3. Combined Approach - Local Linear
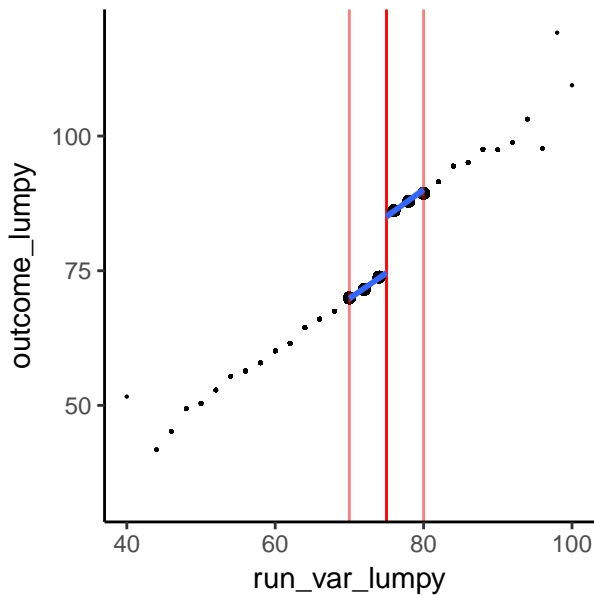
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- ▶ In practice, apply all three as robustness checks

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  - Units far from the threshold are very different for a reason, and causal effects are likely to be different

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  - Risk of sorting/manipulation

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  - ▶ **Running Variable:** Margin of victory
  - ▶ **Treatment:** Winning a close election
  - ▶ **Control:** Losing a close election
  - ▶ **Outcome:** Anything that happens later...

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  - So potential outcomes are not balanced
  - But no other case (9 countries) has this problem

Political Economy: Incumbency Power

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  - ► Corruption for campaign financing
  - ► Media control

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  - ▸ What is the challenge to causal inference?

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    - We need 'as-if' random variation in incumbency status to balance potential outcomes
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    - Within 1-2% points, elections are a coin flip

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    - **Outcome:** Vote share for party in 2004

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  - ► Close elections do seem to be 'as-if' random; there is balance close to the threshold
  - ► More balance the closer we get to the threshold
  - ► No sorting

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- Results for being an incumbent:
    - PMDB *loses* about 4-7% of vote share
    - PFL *loses* about 4-7% of vote share
    - No effect on PSDB

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  - ► Weak party system - mayors often switch parties and parties can't enforce better performance
  - ► Mayors more concerned with accumulating resources or running for higher office than being re-elected
- ► Negative incumbency effects are common in developing countries

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- ▶ Critique:
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  - ▸ Candidate-level analysis likely to reveal greater incumbency bias, due to party-switching

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    - ▸ Local radio systematically used to favour specific politicians
    - ▸ Incumbents better placed to initiate exchange between Mayors and legislators
- ▶ What is the challenge to causal inference here?

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- ▶ Difference-in-Means within 10-40 vote bandwidth

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Application Approved After Election
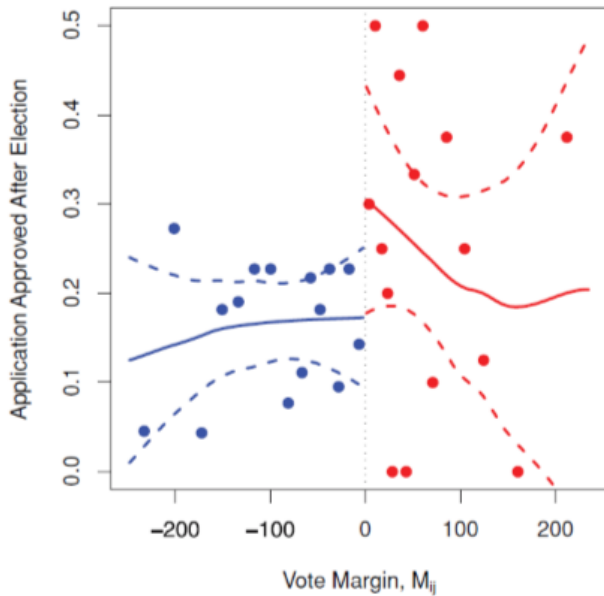
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  - ▸ Is it necessarily wrong that incumbents are more likely to get approval? Perhaps they learn valuable information or professionalism as soon as they come to office

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- What is the challenge to causal inference?

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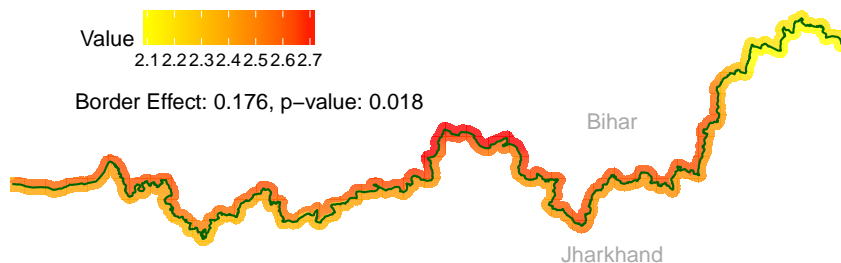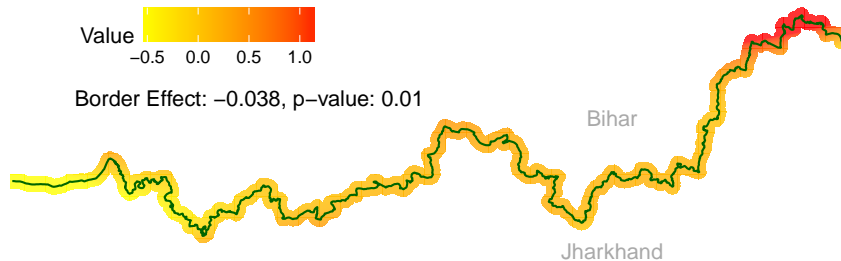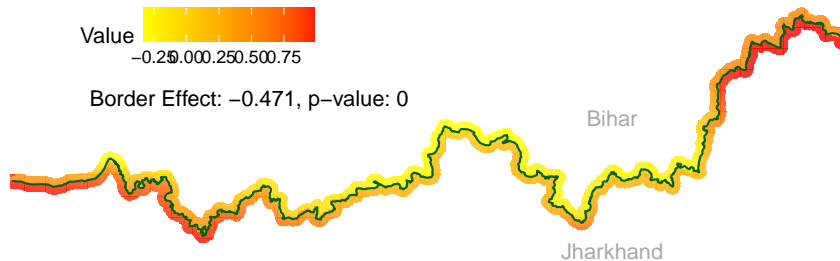 - ▸ **Outcome:** Political attitudes and behaviour

Pair Matched Villages
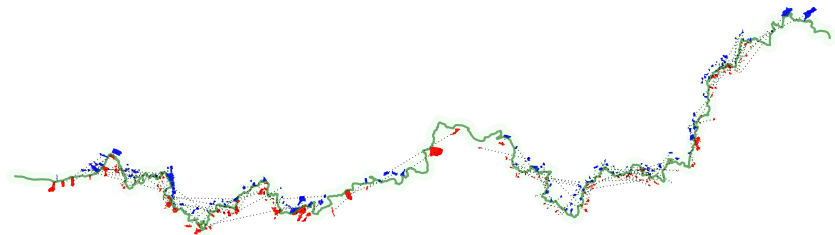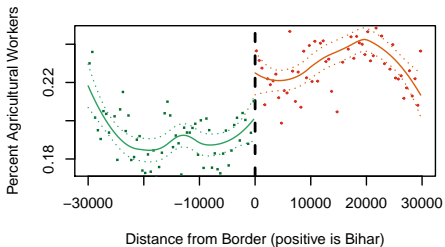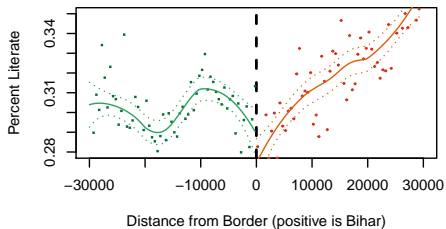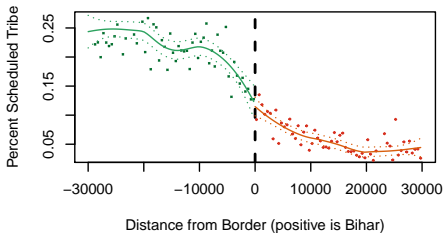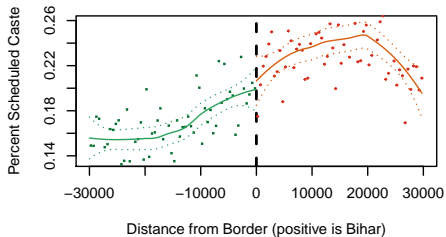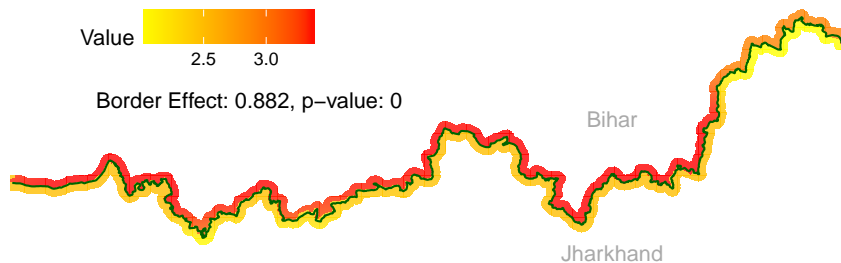
Predicted Value Plot of Likelihood of Incumbent Providing Public Goods if Reelected
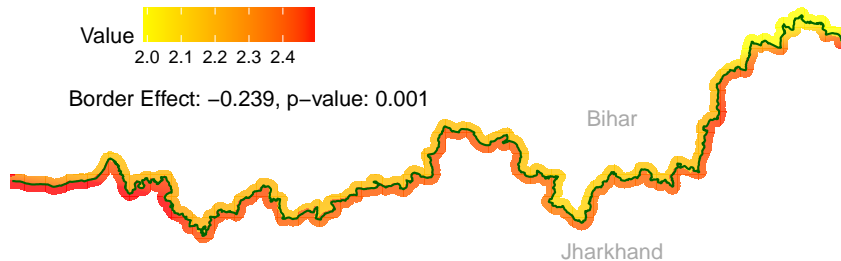
Predicted Value Plot of Likelihood of Corrupt Elite being Caught

Predicted Value Plot of Estimated Government Contacts Network Size

Predicted Value Plot of Gram Sabha Attendance

Value

2.0 2.1 2.2 2.3 2.4

Border Effect: −0.239, p−value: 0.001

Bihar

Jharkhand

Predicted Value Plot for Trust in the Civil Service

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    - Incumbents' policy has **political feedback effects**
    - Coordination among voters has helped re-elect the reformer twice
    - But no fundamental change in vulnerability or aversion to clientelism
    - A reduction in clientelism may also have reduced political participation/trust