Exposure to Hazards, Environmental Concerns, and Green Voting

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Environment and well-being

Environmental factors and human well-being are connected in various ways

„The changes that have been made to ecosystems have contributed to substantial net gains in human well-being and economic development, but these gains have been achieved at growing costs […]“
Environmental change

In many regions of the world, we observe increased degradation and more frequent and extreme environmental events.

Source: IPCC (2014)
... but there is hope

“A quiet revolution sweeps Europe as Greens become a political force”

Germany: Support for the Greens has almost tripled in the two years prior to the 2019 EU election

Aim: Study to what extent experiences with environmental hazards influence environmental concerns and voting behavior

Source: Guardian 2019 (June 2)
Contribution

- A variety of factors can influence voting outcomes, including political movements

- **Main challenge**: Removing the influence of potentially confounding trends from the estimation

- **Contribution**:
  
  First study to explore the impact of exposure to hazards on voting
  
  Identification exploiting quasi-experimental variation in conditions
  
  Using a unique spatially fine-gridded data set of EP elections over time
Literature


• Gap in the literature as to what extent experiences with environmental hazards influence voting outcomes
Data

• **Election data**
  – Data from last 8 EP elections (1984-2009) for all EU member countries on constituency, i.e. district level
  – Geo-referenced data allowing analysis on fine spatial scales

• **Environmental concern**
  – Eurobarometer data, 2000-2019, NUTS 2 level
  – Outcome: Environmental issues or climate change as priority for EU
  – Future work: Eurobarometer life satisfaction data

• **Environmental hazards**
  – Temperature anomalies, CRU TS dataset of the University of East Anglia, 1901-2019
  – Urban flood magnitude, Dartmouth Flood Observatory, 1985-2019
Design and methods

Analysis of the change in environmental concerns and voting outcomes for the same region given exogenously changing conditions

Two-way fixed effects specification:

\[ Y_{it} = T_{it}\alpha + F_{it}\beta + X_{it}\gamma + \theta_i + \delta_t + \varepsilon_{it} \]

with:

- \( Y_{it} \): Outcomes: environmental concern or voting behavior
- \( F_{it}, T_{it} \): Flood and temperature anomalies in region
- \( X_{it} \): Additional demographic controls
- \( \theta_i, \delta_t \): Spatial and time fixed effects
Descriptive statistics

Temperature anomalies
cumulated 1985-2018

Urban flood magnitude
cumulated 1985-2018

Source: own calculation, Dartmouth Flood Observatory, CRU TS data 1985-2019
Descriptive statistics

Differences in environmental concerns across Europe
% respondents perceiving environmental issues as important for EU

Source: own calculation, Eurobarometer Nov 2017 (za6928)
Descriptive Statistics

Environmental issues are increasingly seen as priority
% respondents agreeing that issues are important for EU

Source: own calculation, Eurobarometer 2010-2019
## Results: Impact of exposure on concerns

### Fixed Effects models: Impacts of hazard exposure on env. concerns

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>(1) Climate change as priority</th>
<th>(2) Env. issues as priority</th>
<th>(3) Both issues combined</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature anomalies</td>
<td>0.00793*** (0.00140)</td>
<td>0.00424*** (0.000840)</td>
<td>0.0108*** (0.00166)</td>
</tr>
<tr>
<td>(mean, past 12 months)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban flood magnitude</td>
<td>0.00270** (0.00135)</td>
<td>0.00328*** (0.00112)</td>
<td>0.00550*** (0.00180)</td>
</tr>
<tr>
<td>(mean, past 12 months)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>0.0382*** (0.00289)</td>
<td>0.0488*** (0.00217)</td>
<td>0.0854*** (0.00349)</td>
</tr>
<tr>
<td>Spatial and time FE</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Observations</td>
<td>2,609</td>
<td>2,609</td>
<td>2,609</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.428</td>
<td>0.249</td>
<td>0.460</td>
</tr>
<tr>
<td>Number of NUTS units</td>
<td>142</td>
<td>142</td>
<td>142</td>
</tr>
</tbody>
</table>

Clustered robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1
Results: Impact of exposure on concerns

Effect of temperature anomalies
Mean temperature anomaly in past 12 months
Discussion and next steps

• **Limitations:**
  – Direct vs. indirect exposure
  – Unclear mechanisms

• Preliminary evidence that exposure to *environmental hazards influences environmental concerns* and political priorities in Europe

• **Next steps:**
  – Manifestation in voting outcomes
  – Embedding findings in theoretical framework
  – Exploration of mechanisms explaining effects
Thank you for your attention!

Contact

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Preliminary results

Changes in flood magnitude in Europe over time
1985-2018

Source: own calculation, Dartmouth Flood Observatory, 1985-2019