Beg or Bargain? The domestic politics of foreign aid delivery in response to climate-related disasters

CERDI Phd Seminar

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Introduction

Motivation

- *Frequency and intensity* of climate extremes will *rise*, even at +1.5°C (IPCC 2023)
- Already major *losses and damages*, especially in LMICs
- Allocation/Access to foreign aid for *relief and reconstruction* is a contested issue
- *Two-level* bargaining game (donor ⟷ leader ⟷ civil society)

Research question

- **What is the effect of climate-related disastrous extreme events on post-disaster aid delivery?**
- **Does domestic politics play a role in shaping the international response?**

This Paper

What I do

- Look at the effect of exogenous shocks (disasters) on aid delivery
- Use *dyadic panel* data of bilateral and multilateral aid flows
- Build a global measure of *exposure to hazard intensity* at the country-year level
- Estimate *dynamic* effects through an event study approach
- Test whether *state-society relations* in recipient country influence aid delivery

What I find

- TBC

Related literature

Post-disaster foreign aid allocation (Yang 2008; David 2011; Becerra, Cavallo, and Noy 2014; Arezki et al. 2025)

- Look at aid volume and aid *composition*
- Use a global multi-hazard measure of *physical* exposure
- Consider recipient's *domestic political economy* factors

Aid composition (Raschky and Schwindt 2012; Dietrich 2013; Knack 2014)

- Estimate *dynamic* effects of exogenous shocks
- Consider both *design* and *implementation* dimensions
- Look at the impact on different *types* of aid

Conceptual framework

- Mostly donor-centered mechanisms suggested in the empirical literature

e.g., perception of needs/capacity, strategic interests, etc.

- No/Low domestic agency in the recipient country (most often) assumed

Domestic politics and Aid policy

- External discipline: donor → leader (Bourguignon and Platteau 2022)

e.g. conditionality in the mode/channel of delivery (Raschky and Schwindt 2012; Dietrich 2013; Knack 2014)

- Internal discipline: population → leader

e.g. political system (Flores and Smith 2013; Cole, Healy, and Werker 2012)

- Substitution effect between internal/external discipline (Bourguignon and Gunning 2020)

Data

Data

Outcomes

- *Source*: project-level OECD Creditor Reporting System (CRS), 2000-present
- Official Development Assistance (ODA) commitments, constant US$
- **Design** *(Policy influence)*: co-operation modalities

  → Debt relief and Budgetary support, core/pooled contributions, project-type interventions
- **Implementation** *(Technical control)*: channels of delivery

  → State vs. non-State (NGOs, multilateral, private sector)
- *Sample*: Top 20 (bilateral/multilateral) donors in humanitarian or development ODA

Data

Treatment

- *Source*: EMDAT/GDIS
- Climate-related hazards (IPCC 2023)
  - → sudden-onset: wet (heavy rainfall, floods), windy (storms)
  - → slow-onset: dry (droughts), hot (extreme temperature)

▸ Time

▸ Geography

▸ Time x Geography

Data

Treatment: Exposure to hazard intensity

Follow approach suggested by Dellmuth et al. (2021)

- Link gridded climate data to ADM1-level geocoded disaster locations
  - → Baseline distribution (1980-today) of grid-level daily weather variables
  - → Extreme event = daily weather value > 95th percentile baseline distribution
  - → Intensity = frequency of daily extreme events per year
  - → Average grid-level yearly intensity measures at ADM1-level disaster location
- Finally, aggregate disaster locations at the country-year level with a (population-)weighted sum
- n.b. Similar approach than in other single-hazard studies in climate econometrics (e.g., 'degree-days')

Data

Source: the Varieties of Democracy (V-DEM) dataset

State capacity

- index by O'Reilly and Murphy (2022)
- Four dimensions:
  1. fiscal capacity,
  2. a state's control over its territory,
  3. the rule of law
  4. the provision of public goods used to support markets
- Similar as Arezki et al. (2025)

Political regime

Empirical stragegy

Main challenges for identification

Treatment

- Multiple recurring 'on-off' (non-absorbing) events
- Carryover effects ($D_{t-n} \Rightarrow Y_t$)
- Non-binary treatment, cf. hazard intensity
- Treatment heterogeneity, e.g., sudden-onset vs. slow-onset events

Outcome

- Non-normal distribution: non-negative, skewed, many zeroes (extensive margin)
  (Chen and Roth 2024)

Indentification strategy

Follow a similar approach as Bettin, Jallow, and Zazzaro (2025)

- Exploit the exogenous nature of disasters
- Non-parametric event study specification (Dobkin et al. 2018)
- Multiple Dummies On (MDO) approach (Sandler and Sandler 2014)
  - → Multiple event-time dummies are taken on at once
  - → Adapted to overlapping effect windows
- Binned endpoints to defined the *effect window* (Schmidheiny and Siegloch 2023)
  - → Assume constant treatment effects outside the window (stabilization period)
  - → Obs. outside the effect window are considered as controls ▸ Appendix

Empirical stragegy

Empirical specification: Event study (1)

$$Y_{drt} = \sum_{m=\underline{m}}^{\overline{m}} \beta_m \mathbb{B}_{rt}^m + \sum_{z \in Z} \beta_z X_{Z_{drt}} + \alpha_{dr} + \tau_t + \epsilon_{drt}$$

Y_{drt}: (log) ODA commitments from donor *d* to recipient *r* at year *t*

$\mathbb{B}_{rt}^m$: the disaster indicator binned at the endpoints $[\underline{m}; \overline{m}]$

X'_{drt}: donor-year, region-year fixed effects, and recipient-specific linear trends

- *Potential confounders: global and regional climate dynamics, local land-use changes*

α_{dr}: donor-recipient pair fixed effects

τ_t: year fixed effects

Results

Baseline results

- *Not included yet*

Mechanisms

- State capacity
- Domestic political regime
- State capacity / Political regime
- (Conflict)
- (International political alignment)

Heterogeneity

- Nature of the disaster:
  - → sudden-onset / slow-onset disasters
  - → hydrological, meteorological, climatological
- Bilateral/Multilateral donors
- Recipient income groups
- Channels of delivery: NGO, Multi., Private

Robustness checks

Treatment

- **Deviation cut-off** (non-linearity assumption): use the 90th or 99th percentiles
- **Baseline climate** (climate belief assumption): 20-year or 30-year
- **Weighting scheme**: grid-level

Outcome

- **Amount**: ODA disbursements
- **Proportions**: ODA % of total

Estimation

- **Effect window length**: stabilization period
- **Absorbing treatment**: single first-treated cohorts (Deryugina 2017), 'largest' treatment cohorts

Robustness checks

- **Estimators**: imputation/counterfactual estimators (Borusyak, Jaravel, and Spiess 2024; Liu, Wang, and Xu 2024), TWFE PPML

Conclusion

Conclusion

- TBC

Appendix

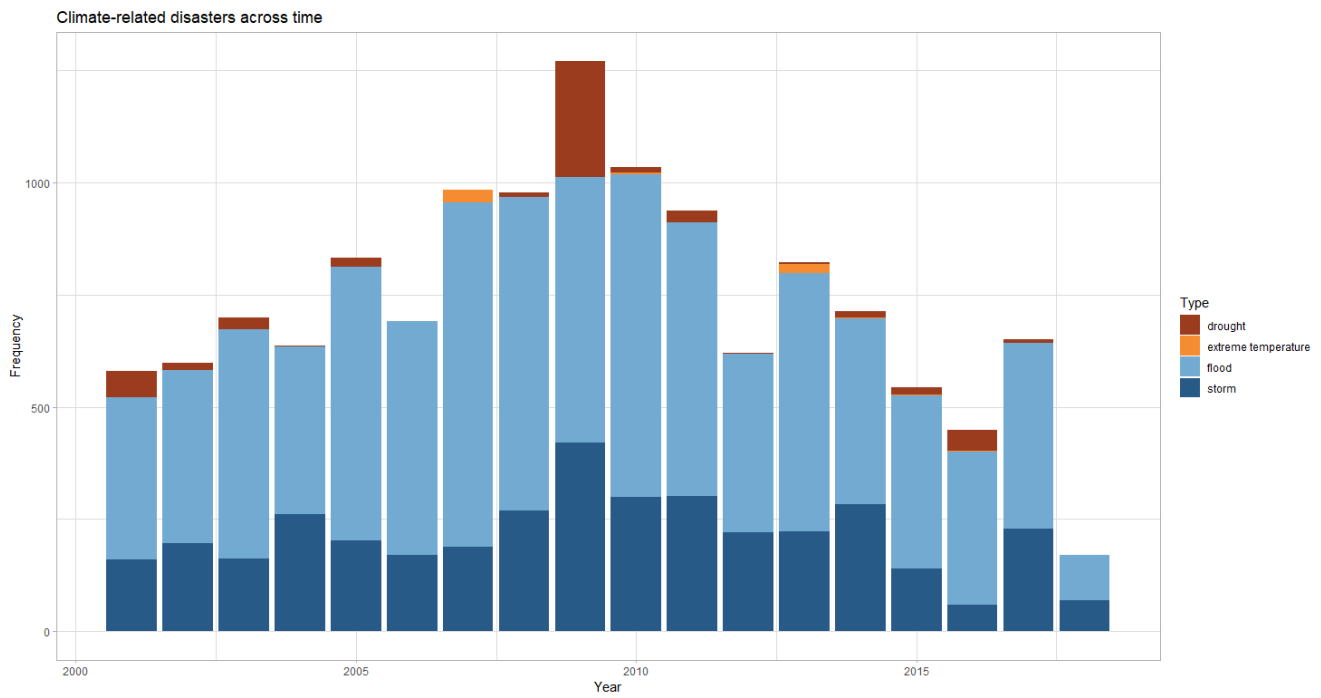

Climate-related disasters across time
Frequency
1000
500
0
2000
2005
2010
2015
Year
Source: GDIS
Type
drought
extreme temperature
flood
storm

Figure 1

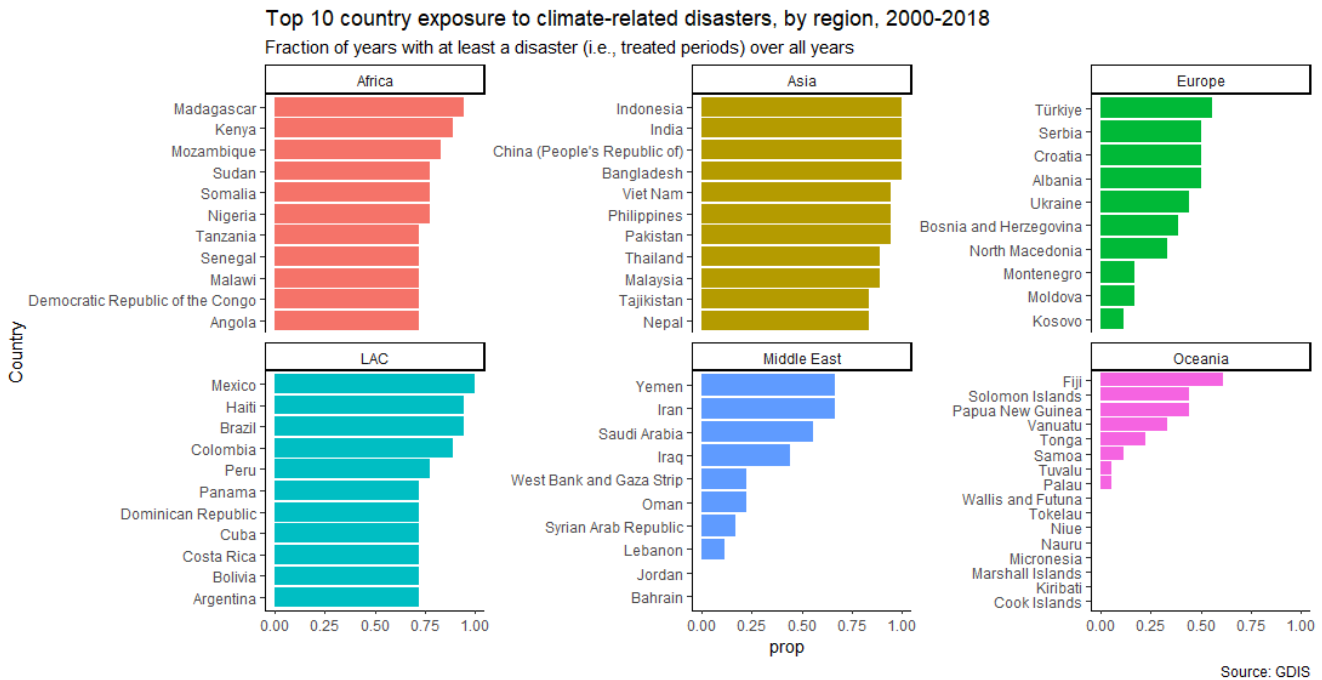
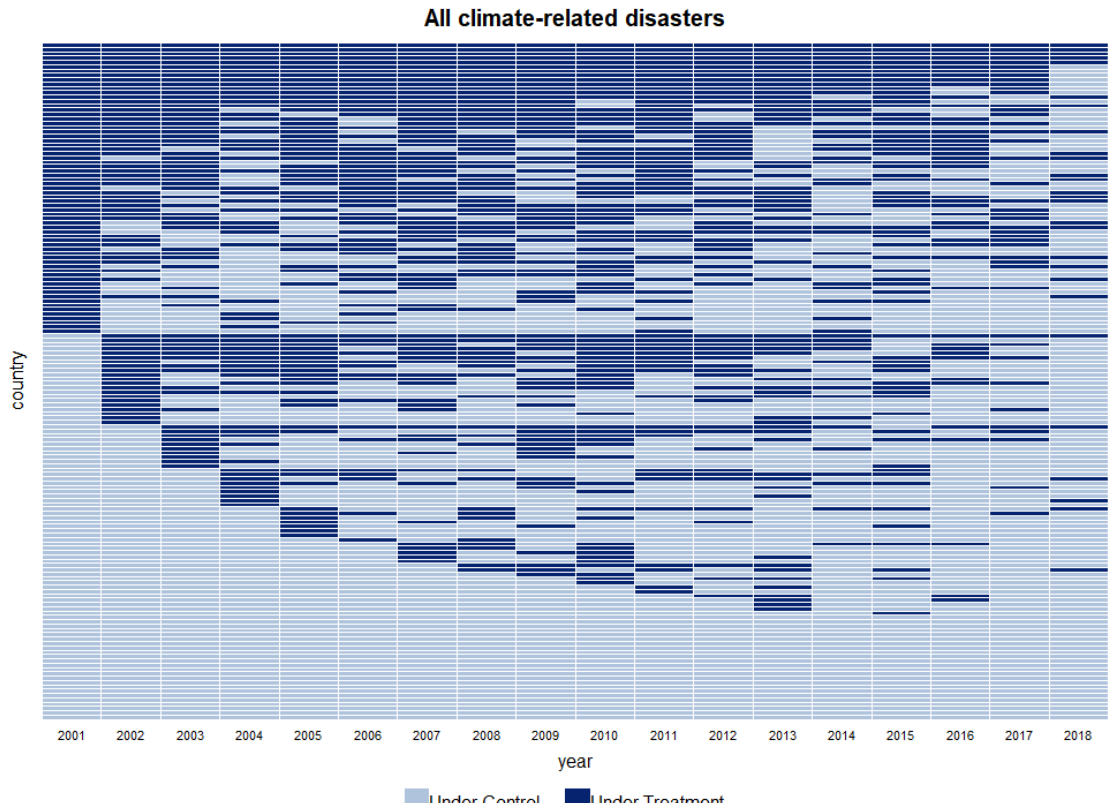

Top 10 country exposure to climate-related disasters, by region, 2000-2018
Fraction of years with at least a disaster (i.e., treated periods) over all years
Africa
Madagascar
Kenya
Mozambique
Sudan
Somalia
Nigeria
Tanzania
Senegal
Malawi
Democratic Republic of the Congo
Angola
Asia
Indonesia
India
China (People's Republic of)
Bangladesh
Viet Nam
Philippines
Pakistan
Thailand
Malaysia
Tajikistan
Nepal
Europe
Türkiye
Serbia
Croatia
Albania
Ukraine
Bosnia and Herzegovina
North Macedonia
Montenegro
Moldova
Kosovo
LAC
Mexico
Haiti
Brazil
Colombia
Peru
Panama
Dominican Republic
Cuba
Costa Rica
Bolivia
Argentina
Middle East
Yemen
Iran
Saudi Arabia
Iraq
West Bank and Gaza Strip
Oman
Syrian Arab Republic
Lebanon
Jordan
Bahrain
Oceania
Fiji
Solomon Islands
Papua New Guinea
Vanuatu
Tonga
Samoa
Tuvalu
Palau
Wallis and Futuna
Tokelau
Niue
Nauru
Micronesia
Marshall Islands
Kiribati
Cook Islands
Country
0.00
0.25
0.50
0.75
1.00
prop
Source: GDIS

Figure 2


All climate-related disasters
country
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
year
Under Control
Under Treatment

Empirical stragegy

Example: Effect window matrix

Table

Effect window

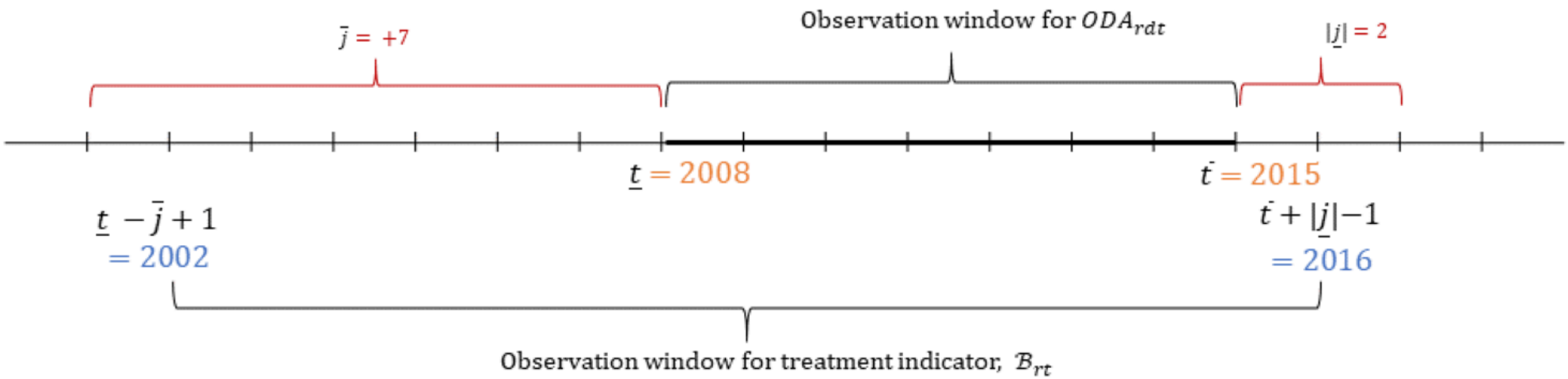


Figure 3: Effect window

- **Effect window**: $[\underline{m} = -2; \overline{m} = +7]$
- **Estimation sample**: 2008-2015

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