Pledge and Prejudice: The Reality of International Climate Commitments

Iasmin Goes
Colorado State University

September 2024

Motivation: a 2017 announcement by the World Bank

World Bank to end financial support for oil and gas extraction

Bank announces in Paris it 'will no longer finance upstream oil and gas' after 2019 in response to threat posed by climate change

Figure 1: The Guardian headline, 12 December 2017

But. . .

Figure 2: The Guardian headlines, 6 October 2022 (top) and 12 September 2023 (bottom)

Technically, this is not a contradiction

The 2017 announcement had a caveat:

> *"In exceptional circumstances, consideration will be given to financing upstream gas in the poorest countries where there is a clear benefit in terms of energy access for the poor and the project fits within the countries' Paris Agreement commitments."*

Did anything change after 2019?

Clearly, the World Bank did not *stop* financing upstream oil and gas projects altogether.

But did it *reduce* oil and gas financing?

A preliminary answer: **yes**

World Bank lending: a primer

- The World Bank offers **low-interest loans and grants** for development projects
  - Focus: poverty reduction, education, health, infrastructure

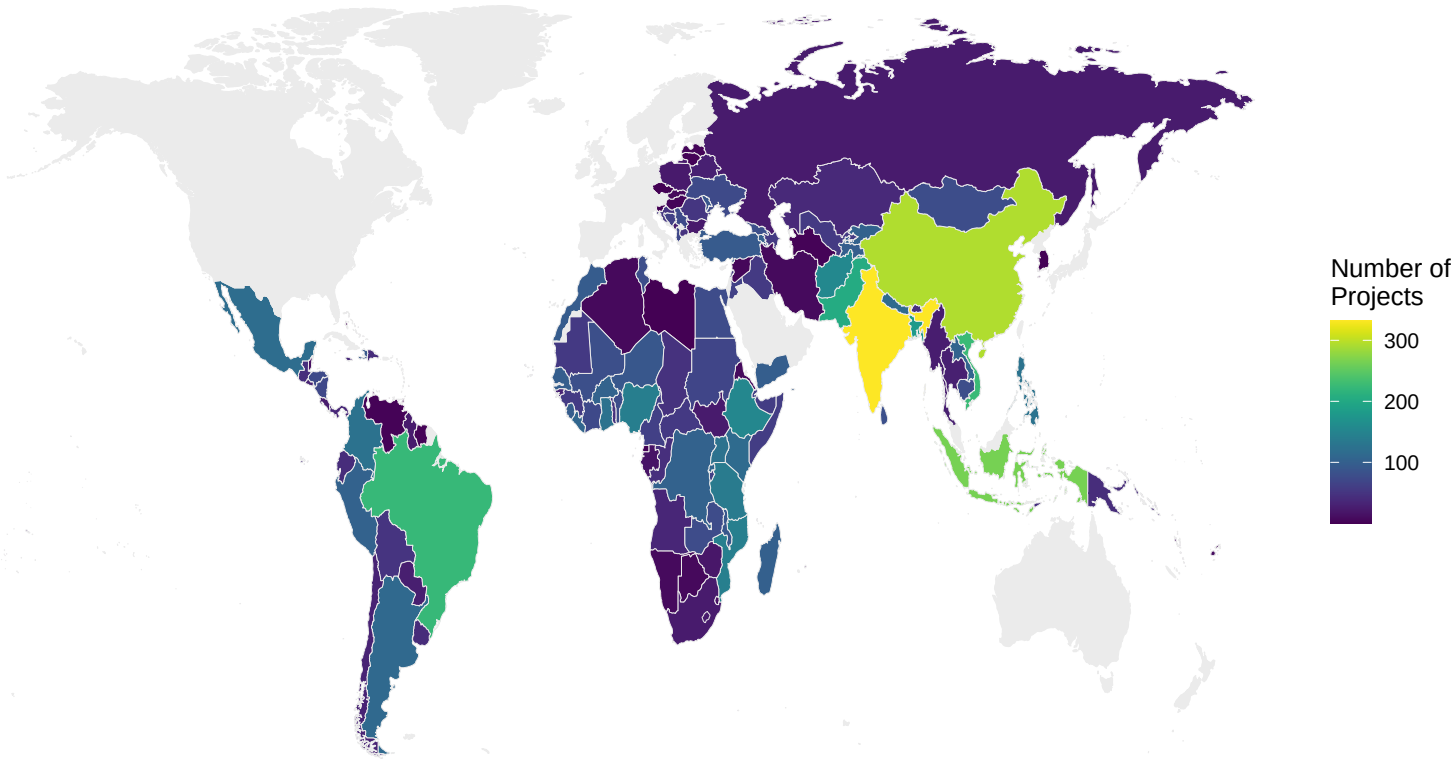

Figure 3: Number of projects approved by country, 2001-2022

Can the World Bank address climate issues?

- Compared to other IOs, the Bank has much more **financial autonomy** (Nielson and Tierney, 2003)
- IO bureaucrats are **independent actors** with their own agendas (Barnett and Finnemore, 1999)
- World Bank staff sets priorities, influence recipient performance (Heinzel and Liese, 2021; Cormier and Manger, 2022)
  - IMF staff cares about the climate (Clark and Zucker, 2023)
  - World Bank staff likely cares, too!

Expectation 1: after 2019, the World Bank will *reduce* oil and gas finance and *increase* climate finance

But there are challenges

- Climate-vulnerable countries have **limited influence**
- That's because the Bank serves its **largest shareholder**, the US
  - US allies, US aid recipients, UNSC members receive more loans, with fewer conditions (Fleck and Kilby, 2006; Dreher, Sturm and Vreeland, 2009, 2015)
  - Staff designs programs compatible with US preferences (Clark and Dolan, 2021)
- To remain competitive, the Bank makes fewer demands to Chinese aid recipients (Hernandez, 2017; Zeitz, 2021)

An additional challenge: natural resource wealth

- Non-renewable natural resources can harm democratic governance, but also promote economic development
- If the World Bank cuts oil and gas financing, resource-rich countries might. . .
  - borrow from China
  - fail to develop transparent institutions
  - complain about IO hypocrisy
  - ignore future loan conditions and policy advice

Expectation 2: after 2019, the World Bank will *not reduce* oil and gas finance

Descriptive analysis

- **Data:** all projects approved by the World Bank Executive Board, January 2001 to December 2022
  - Every project has a description (title and development objective)
- **Challenge:** there are 11 official World Bank project sectors, but not every project was assigned a sector
  - The Bank might have an incentive to underreport/misreport natural resource projects
- **Solution:** classify the project's content using a keyword-assisted topic model (Eshima, Imai and Sasaki, 2024)

How topic models work

- Each project description consists of words
- Words that frequently appear together can be grouped into **latent topics**
- Each word belongs to one latent topic with a certain probability and to another latent topic with another probability
- The model identifies θ, the prevalence of each topic in each project description

Topics of interest (and related words)

1. **Extractives** (oil, gas, petroleum. . .)
2. **Climate and renewables** (solar, wind, carbon. . .)
3. **Environment** (nature, forest, biodiversity. . .)
4. **Placebo: health** (hospital, vaccine, malaria. . .)

Topic prevalence over time, 2001-2022

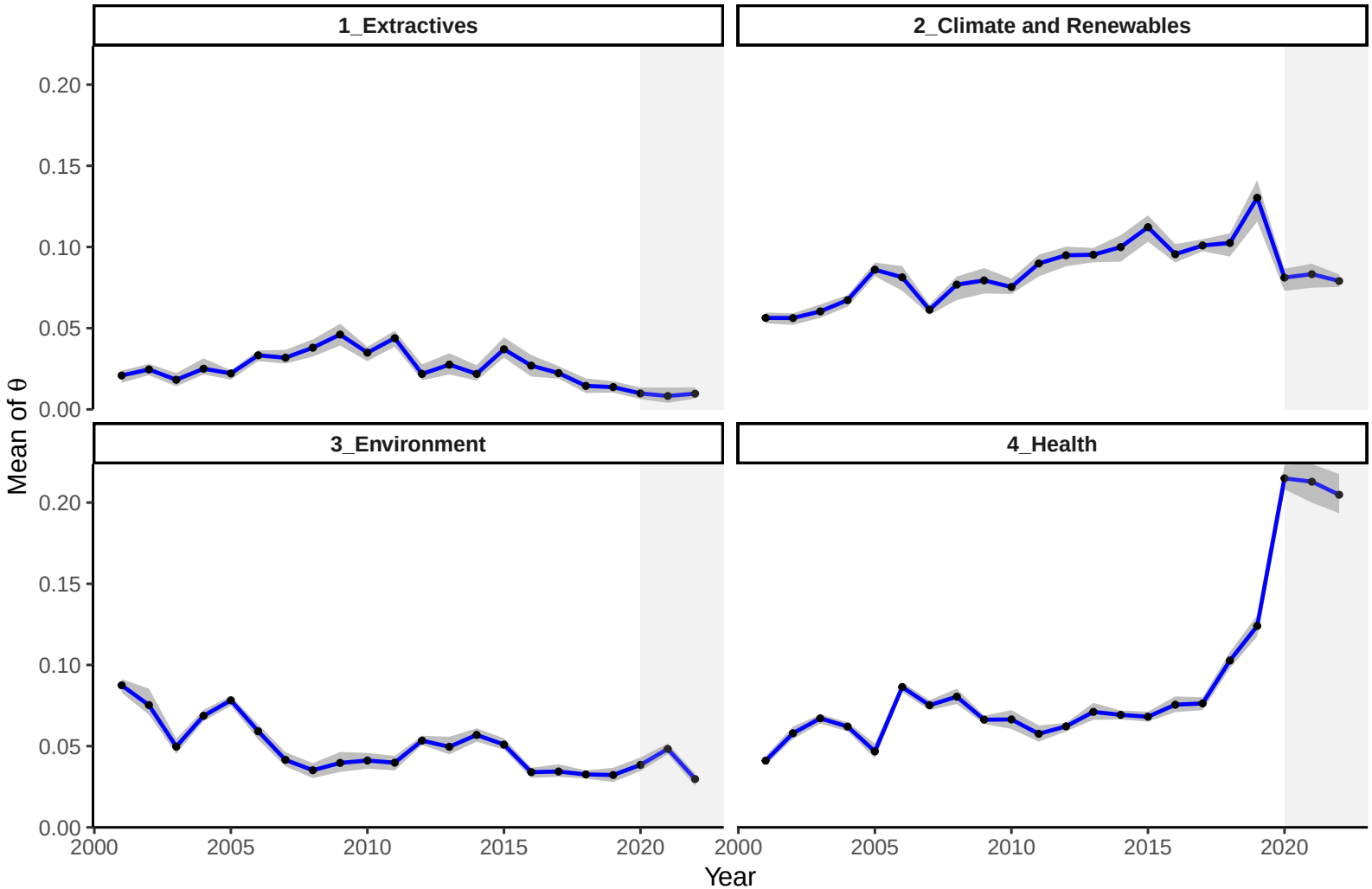

Figure 4: Topic prevalence, averaged for all projects approved each year, with 90 percent CI and post-2019 period in grey

What predicts variation in topic prevalence?

- Controlling for factors like governance, GDP per capita, Chinese finance, or natural disasters, was there any significant change after 2019?
- **Models:**
  - To capture *absolute* change: separate linear regressions with topic prevalence as the DV (Cormier and Manger, 2022)
  - To capture *relative* change: seemingly unrelated regressions with log-ratio transformed outcomes (Tomz, Tucker and Wittenberg,2002)

Predictors of *extractives* (%)

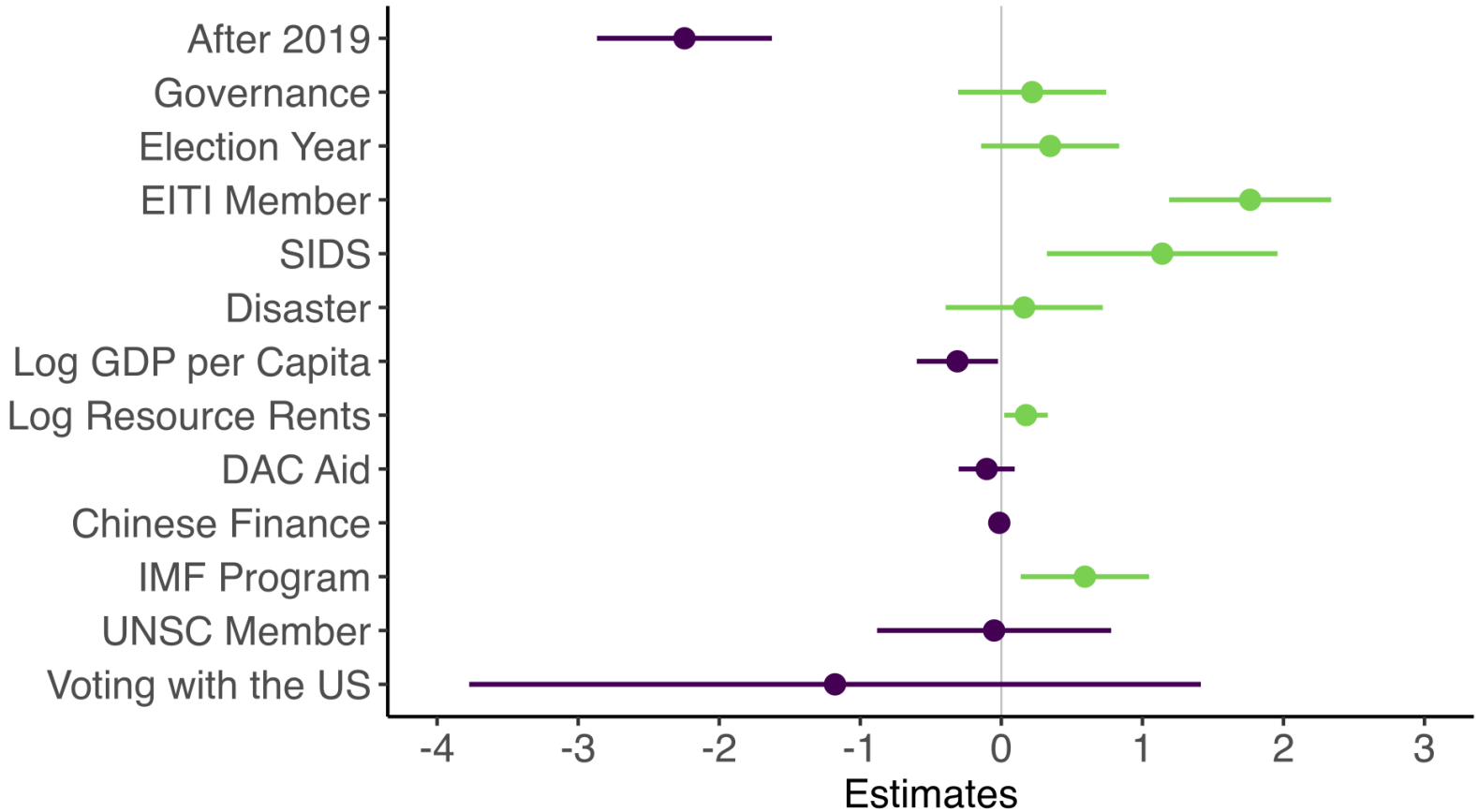

Figure 5: Predictors of variation in the extractive topic, with 90 percent CI. Coefficients indicate percentage point change

Change in *climate and renewables* relative to *extractives*

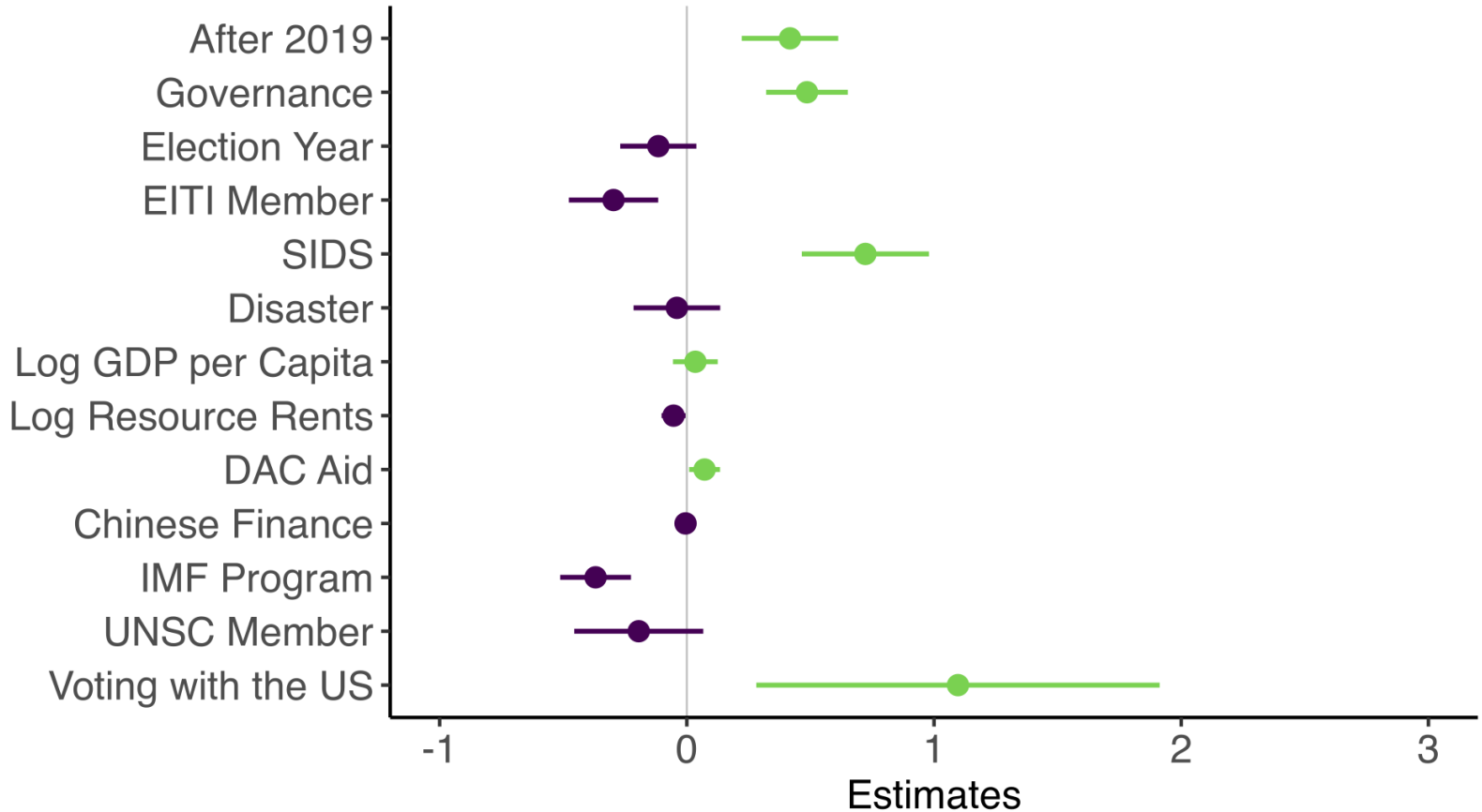

Figure 6: Predicted of variation in the climate and renewables topic relative to the extractive topic, with 90 percent CI. The outcome is log(climate/extractives)

Conclusions and next steps

- The World Bank reduced oil and gas financing after 2019
  - Much of this went to the health sector
  - But at least some of it went to climate and renewables
- Next steps: examine changes in project duration, funding amount
- Expert interviews to examine long-term trends

Questions and comments? iasmin@colostate.edu

Appendix

Keyword assisted topic models

- Problem with traditional topic models: danger of post-hoc theorizing
  - Researchers interpret and label uncovered topics after model fitting
- Advantage of keyword assisted topic models: researchers can incorporate prior substantive knowledge
  - Specifically, they can specify keywords to label the topic of interest ahead of estimation
  - Less post-hoc description, more theory-driven inference
  - More interpretable topics, better classification performance, less sensitive to discretionary choices made by researchers (e.g. starting values of the estimation algorithm)
  - Implementation: `R` package `keyATM`

Keywords used to generate the main topics

- **Extractives:** oil, gas, petroleum, eiti, coal, charcoal, gasoline, extractive, extractives, diesel, fuel, hydrocarbon, lpg, mining, mine, mineral, minerals
- **Climate and Renewables:** renewable, renewables, solar, wind, hydropower, hydroelectric, photovoltaics, biomass, geothermal, climate, ghg, hcfc, hydrochlorofluorocarbons, methane, carbon, sequestration, atmosphere, greenhouse, unfccc
- **Environment:** nature, forest, reforestation, biodiversity, marine, redd, wildlife, environment, environ- mental, gef
- **Health:** health, healthy, healthcare, hiv, hospital, hospitals, influenza, malaria, vaccine, vaccination, maternal, flu, hivaids, covid-19, polio

Predictors of *climate and renewables* (%)

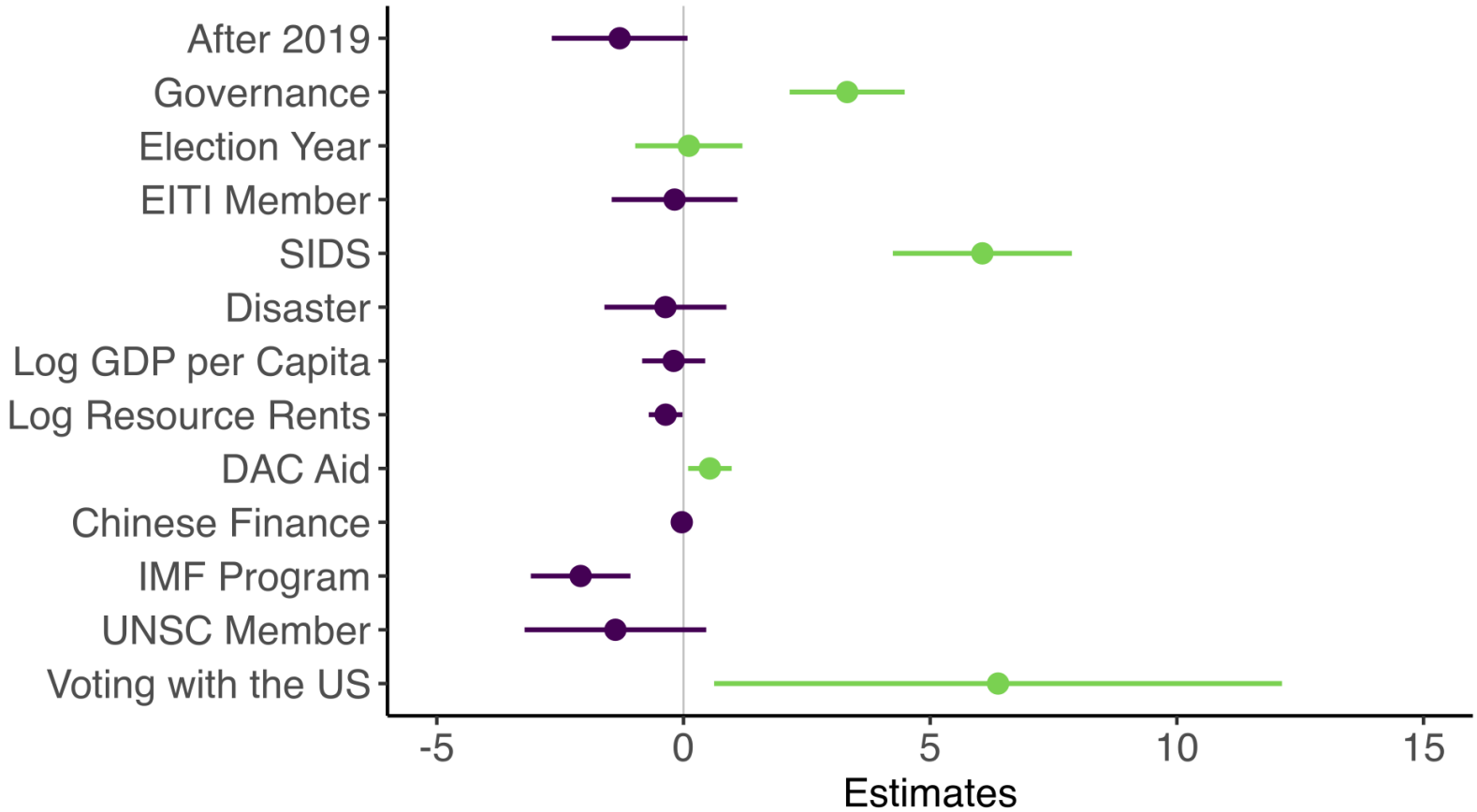

Figure 7: Predictors of variation in the climate and renewables topic, with 90 percent CI. Coefficients indicate percentage point change

Predictors of *environment* (%)

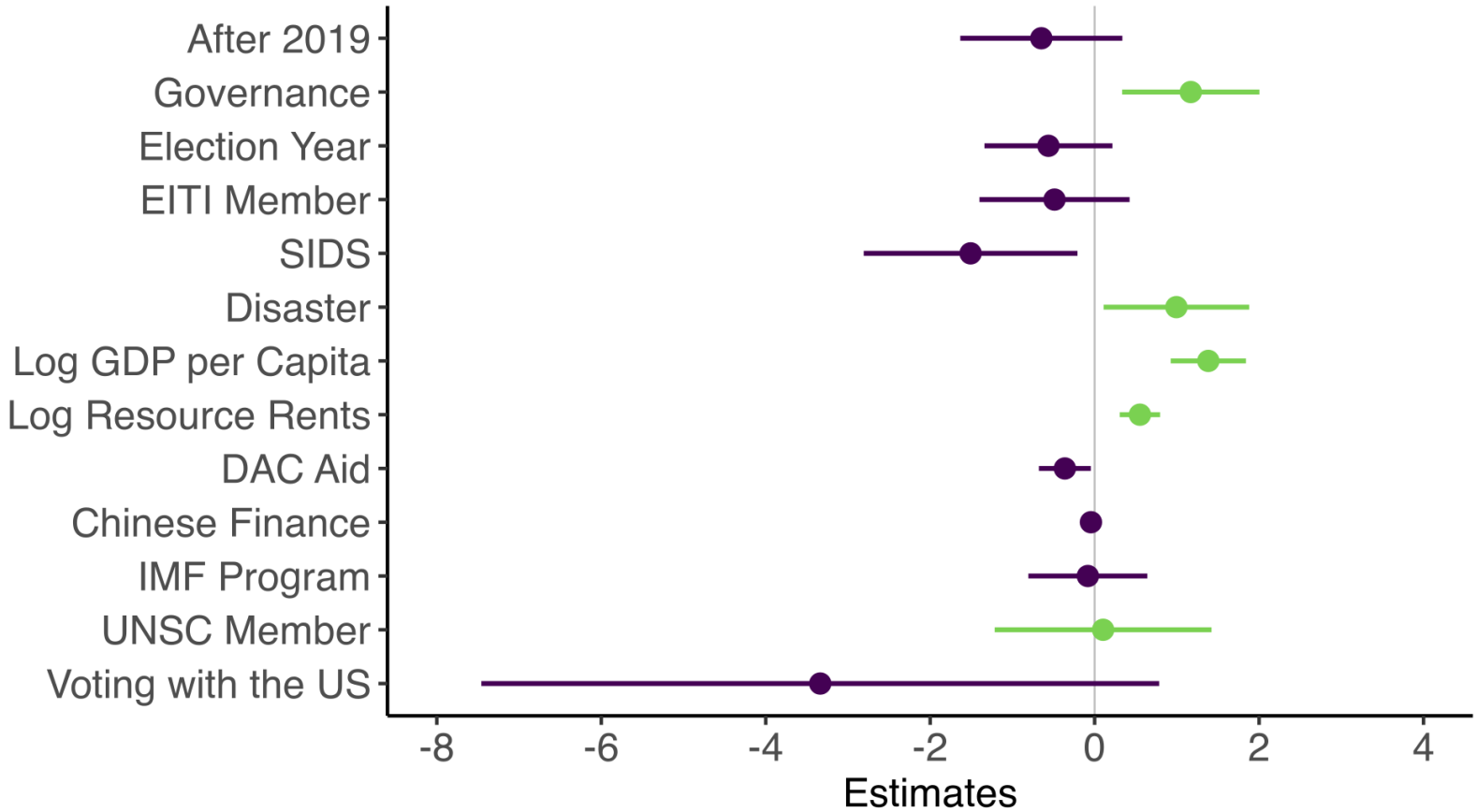

Figure 8: Predictors of variation in the environmental topic, with 90 percent CI. Coefficients indicate percentage point change

Predictors of *health* (%)

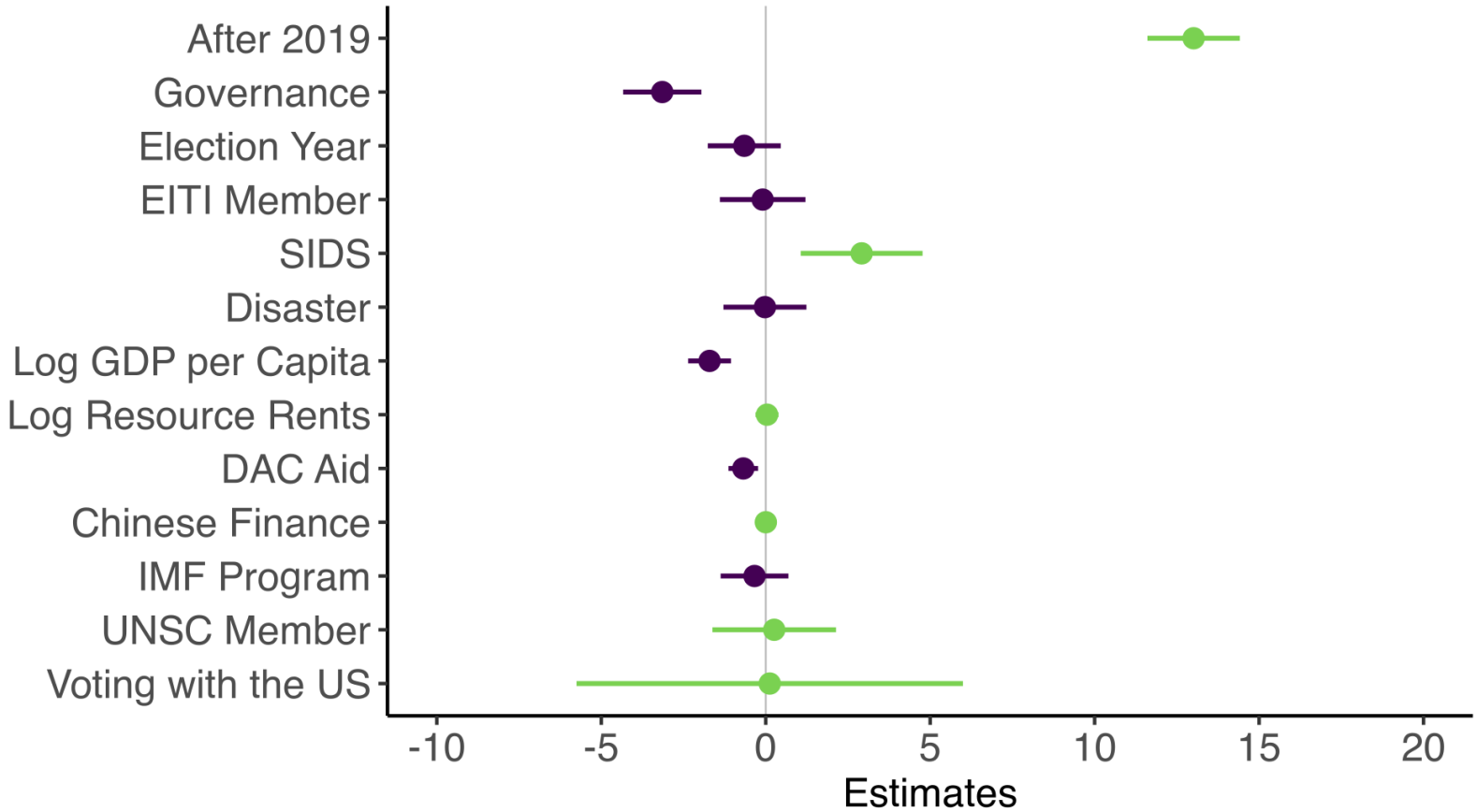

Figure 9: Predictors of variation in the health topic, with 90 percent CI. Coefficients indicate percentage point change

Change in *environment* relative to *extractives*

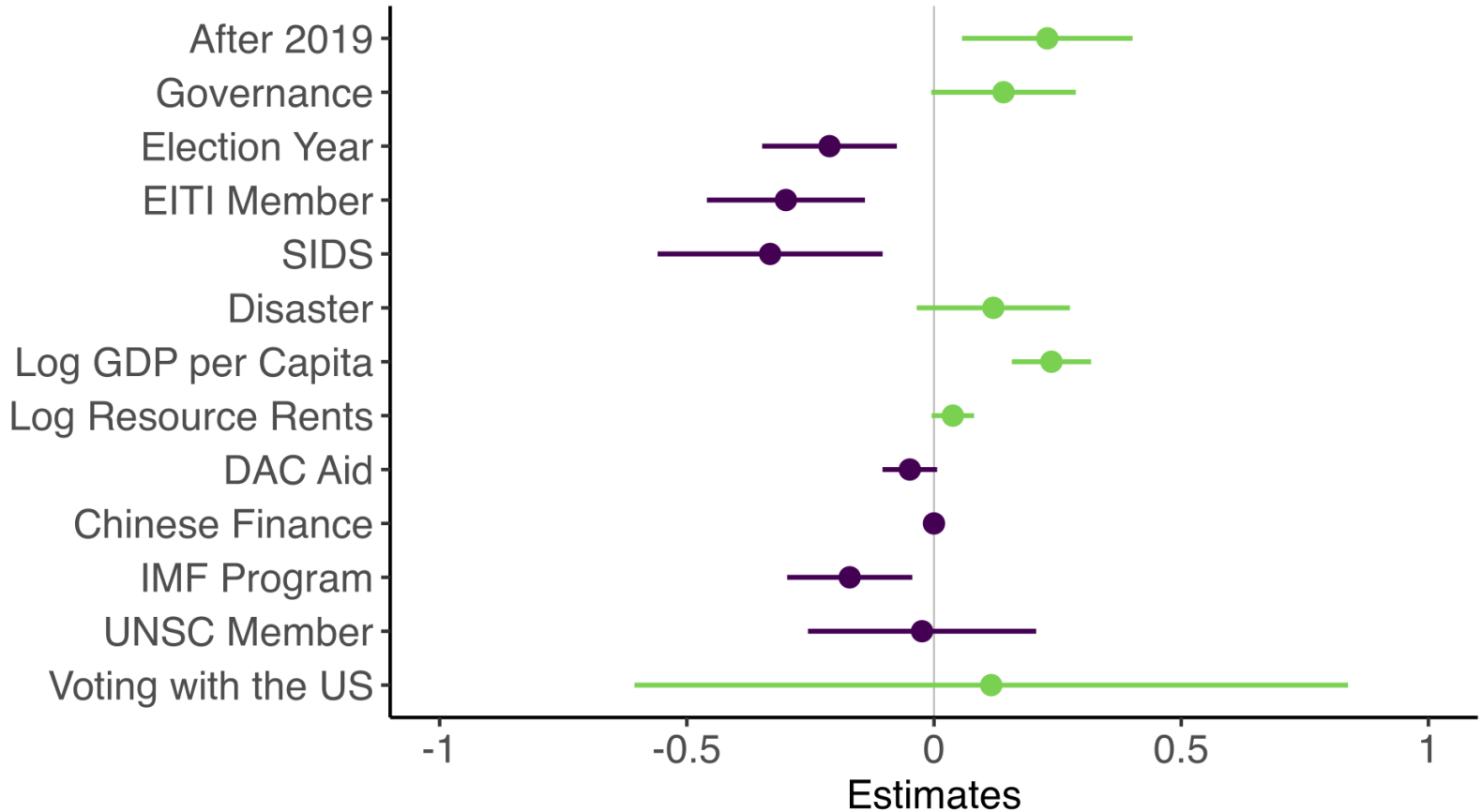

Figure 10: Predicted of variation in the environmental topic relative to the extractive topic, with 90 percent CI. The outcome is log(environment/extractives)

Change in *health* relative to *extractives*

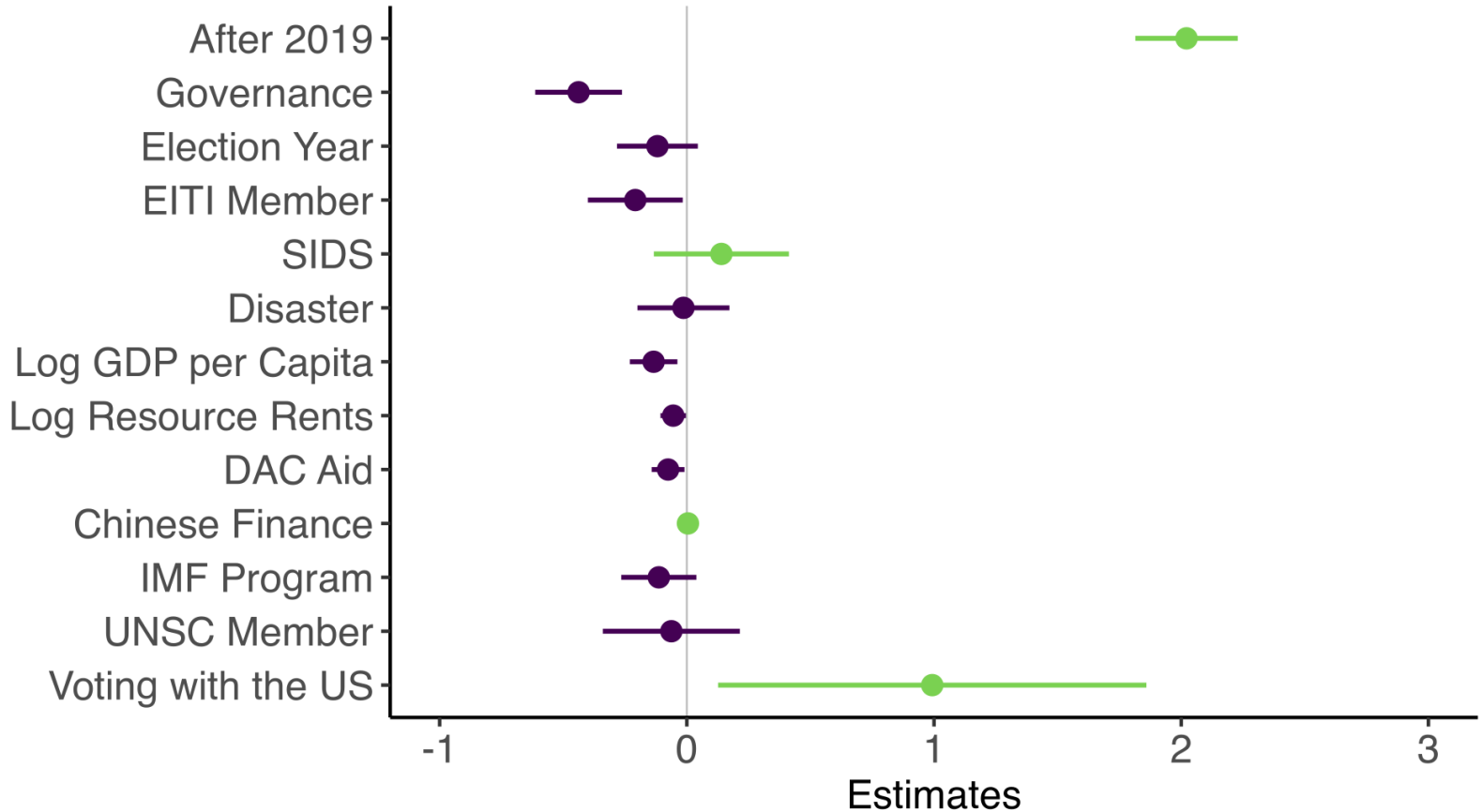

Figure 11: Predicted of variation in the health topic relative to the extractive topic, with 90 percent CI. The outcome is log(health/extractives)