

Recplicating “Economic Impact of Cameroon’s Anglophone Crisis: A Forward Difference-in-Differences Approach”

This repository contains the code and data used to perform FDID (Forward Difference-in-Differences) analysis for the paper “Economic Impact of Cameroon’s Anglophone Crisis: A Forward Difference-in-Differences Approach”. Here is how to reproduce our results.

Project Structure

```
cameroon_fdid/  
  __init__.py  
  cameroon_results_vectorized.py  
  NordOuest.csv  
  SudOuest.csv  
  .github/workflows/runresults.yml  
  pyproject.toml  
  poetry.lock  
  fdid_summary_output2.txt
```

Requirements

- Python 3.12
- Poetry (dependency management and environment reproducibility)
- Git (to clone the repo)

All Python dependencies are defined in `pyproject.toml`.

Setup Instructions

1. Clone the repository

```
git clone https://github.com/jgreathouse9/WBCameroonProject.git  
cd WBCameroonProject
```

2. Install Poetry

```
curl -sSL https://install.python-poetry.org | python3 -  
export PATH="$HOME/.local/bin:$PATH"
```

3. Install dependencies

```
poetry install --no-interaction --no-ansi
```

This creates a virtual environment and installs all required dependencies.

Run the Analysis

Run the FDID analysis using `mlsynth`:

```
poetry run python -m cameroon_fdid.cameroon_results_vectorized
```

Outputs will be written to:

```
cameroon_fdid/fdid_summary_output2.txt
```

GitHub Actions

The workflow `runresults.yml` automatically:

- Installs dependencies with Poetry.
- Runs the analysis.
- Commits updated results to the repository.

Notes

- Ensure `pyproject.toml` and `poetry.lock` are up to date to guarantee environment consistency.
- Any new data files should be placed in `cameroon_fdid/` to be included in the analysis.

Data Availability Statement

We used the Python Google Earth Engine interface to construct quarterly nighttime lights (NTL) at the f

Nighttime Lights (NTL)

- **Dataset & Description:** NASA-NOAA VIIRS Day/Night Band Nighttime Lights (VNP46A2, Version 1) - mon
- **Availability:** Public (Google Earth Engine, GEE).
- **Version / Date accessed:** V1; accessed **May 2025**.
- **Access path (URL):** ``NOAA/VIIRS/001/VNP46A2`` - <https://developers.google.com/earth-engine/dataset>

Administrative Boundaries (Admin-1)

- **Dataset & Description:** FAO Global Administrative Unit Layers (GAUL) - Level 1 (2024); used to aggregate
- **Availability:** Public (GEE).
- **Version / Date accessed:** 2024; accessed **May 2025**.
- **Access path (URL):** ``projects/sat-io/open-datasets/FAO/GAUL/GAUL_2024_L1`` - https://developers.google.com/earth-engine/datasets/catalog/FAO_GAUL_2024_L1

Built-up Filter (Built-Up Mask Used to Mask/Measure NTL)

- **What it is:** A derived mask created in Earth Engine from **JRC GHSL Built Surface 2025**, to retain
- **Source dataset (for reproducibility):** ``JRC/GHSL/P2023A/GHS_BUILT_S/2025`` - multitemporal built-up
- **Availability:** Public (GEE).
- **Version / Date accessed:** 2025 epoch; accessed **May 2025**.
- **Access path (URL):** https://developers.google.com/earth-engine/datasets/catalog/JRC_GHSL_P2023A_GHS_BUILT_S_2025