GIS Data Exercise (and Capstone Project!)

In this exercise, we are providing you a geo-coded dataset of Chinese investment projects abroad. You will have two assignments to work through with this data. First, you will have the chance to explore and visualize the data using the methods assigned in the readings this week to better understand where Chinese investments is directed. The deadline for this assignment is this week.

Second, as part of a capstone project, analyze this data using one or more of the methods we covered during this bootcamp. Think about a valid research question that you can test and develop a theory about your puzzle. Through your analysis, identify some key insights about Chinese investment that you think is substantively interesting. You are highly encouraged to find data online to complete this project. There are no right or wrong answers for this exercise, and the goal is to mimic the analysis you may encounter in your own research.

You will have an additional week to complete this capstone, which is due the last day of your bootcamp on **October 8th**. You'll be asked to submit a write-up of your question, research design, and findings in LaTeX and provide replication files as you would if submitting for publication. You will also present your findings to faculty and staff at ESOC, SPIA, and affiliated departments on **October 8th at 4pm**.

You are expected to implement best practices when it comes to data and code management, which we will cover next week. Don't worry too much yet if you are not familiar with using LaTeX and Beamer, as we will cover this next week as well.

Data

Two datasets are provided:

- `all_flow_classes.csv`: The full list of Chinese Official Finance projects from AidData. It contains information about the location of each project, the recipient country, type of financing, and other project-relevant details.
- `project_descriptions_and_sources.csv`: Descriptions of each project.

The codebook for both datasets is also provided for your reference (`README-Geocoded_Global_Chinese_Official_Finance.pdf`). For more details, see here.

Guidelines for Assignment 1

Visualize Chinese investments in the following ways:

1. Create a map of Chinese investment projects globally. Then, create a few more maps visualizing details of these projects, for example playing with:
    - different kinds of projects,
    - the density of projects per country and/or region,
    - the monetary amount of these projects.
2. Pick a country of interest and create a map of Chinese investment at the province/state level.
    - Note: You will need to find your own shapefiles at the relevant unit of analysis for your country of choice. It is recommended to pick a country with a good number of projects.
3. Pick another country of interest.
    - Grab the map and the coordinates of the country's capital using the Google Maps API. Note: you will need to create your own key here: https://developers.google.com/maps.
    - Report summary statistics about the distance of Chinese projects to the country's capital city (in miles).

Capstone Project

For the second half of the assignment, analyze these projects using one or more of the methods we covered (eg. RDD, event study designs, fixed effect model, etc.). To get you started, here are some ideas about substantive questions to investigate:

- Where are Chinese investment projects located? What types of countries receive more or less aid from China? What are the determinants of which countries receive Chinese aid and which do not?
- Are there differences by type of investments?
- Are there differences or trends over time? What determines the timing of projects?
- Theories about why these differences do or do not occur.
- Are projects disrupted by political events locally, in China, or globally?
- You are welcome to focus in on a country or region of interest.
- What are the impacts of Chinese investment?

Before you go out and collect data, make sure to develop a valid research question that you are interested in and articulate a theory about what you may find with this data. Your final write-up and presentation should cover your research question, design, and findings.