

ECO 567A: Energy Economics with a Geography Focus

Professor Geoffrey Barrows

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Research Project

Project Description

In groups of 3-4, students are assigned to complete a short research project by the end of the course. The purpose of the research project is to learn about a specific question of interest and to apply the empirical methods from the course. Each group will submit a single report at the end of the term of roughly 10-15 pages.

The report should include (1) a question of interest in the field of sustainable development (2) a brief literature review about what has been done on the question to date (3) an empirical strategy for addressing the question with real data (4) a description of the data.

Students are not required to execute the empirical strategy. That is, students do not need to answer the question they pose. The point is to identify an interesting question and propose a strategy for how to answer it. Students may wish to execute the proposed strategy for a different class, or MA thesis, etc. But for the purposes of this course, students need only set up the strategy.

Students will have time during some PC hours to work together on the project and to consult with the professor.

Topics

Students are free to choose their own topics. Here are a few examples. Students are free to choose one of these topics listed below. It is fine for multiple groups to address the same question, though in this case groups should not confer about empirical strategies.

Possible Topics:

- 1) What is the optimal population density of cities? On one hand, higher density minimizes transportation costs within the city. But higher density might also mean higher exposure to pollution. Should policymakers advocate for higher density as a solution to climate change?

- 2) The Clean Development Mechanism (CDM) is a provision of the Kyoto Protocol that enables developed-world firms to offset pollution by investing in developing-world renewable projects. Does the CDM reduce CO₂ emissions in the developing world? Pick one of the major investment projects from the CDM and evaluate if it worked to reduce emissions.
- 3) Satellites are now capable of measuring local air pollution from space at high geographic resolution. How do these measures compare to traditional ground monitors? Are the satellites better at measuring certain pollutants as opposed to others?
- 4) Do government subsidies encourage people to make energy efficiency improvements?
- 5) Do green investments create more or less jobs than other types of investments?
- 6) In the developing world, are internationally-owned firms more or less environmentally friendly than domestic firms?
- 7) What is the impact of increased frequency of natural disasters on agricultural production and consumer welfare?
- 8) What are the effects of chronic exposure to air or water pollution on health or productivity?