Lecture 4: Positive vs. Normative Methods and their Role in Environmental Economics

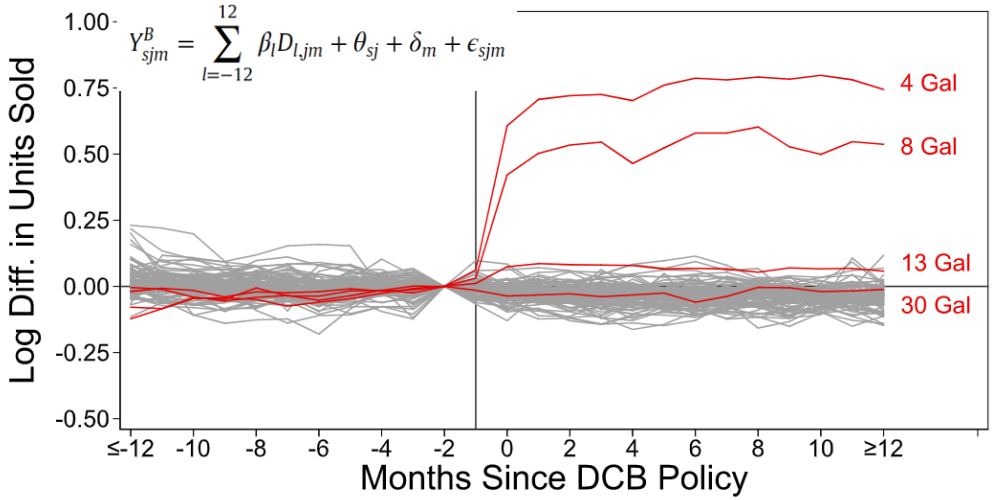
Prof. Parthum

Environmental Economics

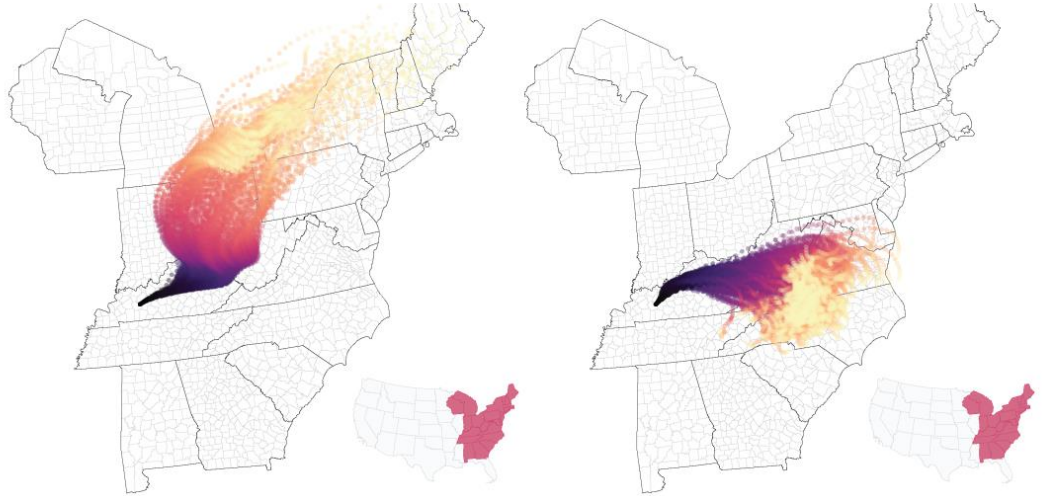
Econ 475

Research Questions in Environmental Economics

- Last time we talked about a few real-world market failures and how researchers go about quantifying them
- Plastic bags, coal plant emissions, etc.
- They combine maths, data, and theory to shine light on externalities
- What type of scientific research would you classify this work as? Positive, or normative?



$$p\text{-Value}(n_s) = \mathbf{P}(X \geq n_s;\ n = N_T,\ p = 0.5) = \sum_{x=n_s}^{N_T} \binom{N_T}{x} 0.5^{N_T}$$



Research Questions in Environmental Economics

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- What is the value of another park?
- What is the value of another park in this neighborhood?
- What is the value of another park in this neighborhood and who would benefit from its installation?
- Where should another public park be installed?

Research Questions in Environmental Economics

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- Environmental economics can be used to answer the quantitative research questions related to the park.
- Using data, theory, and maths, economists can provide really important information to the decision makers.
- But what about the *should* part of the question. How can environmental economists help inform these decisions? Can they?
- At the federal level, there are additional constraints that decision makers face with respect to making decisions based on race, ethnicity, gender, religion, etc.

Research Questions in Environmental Economics

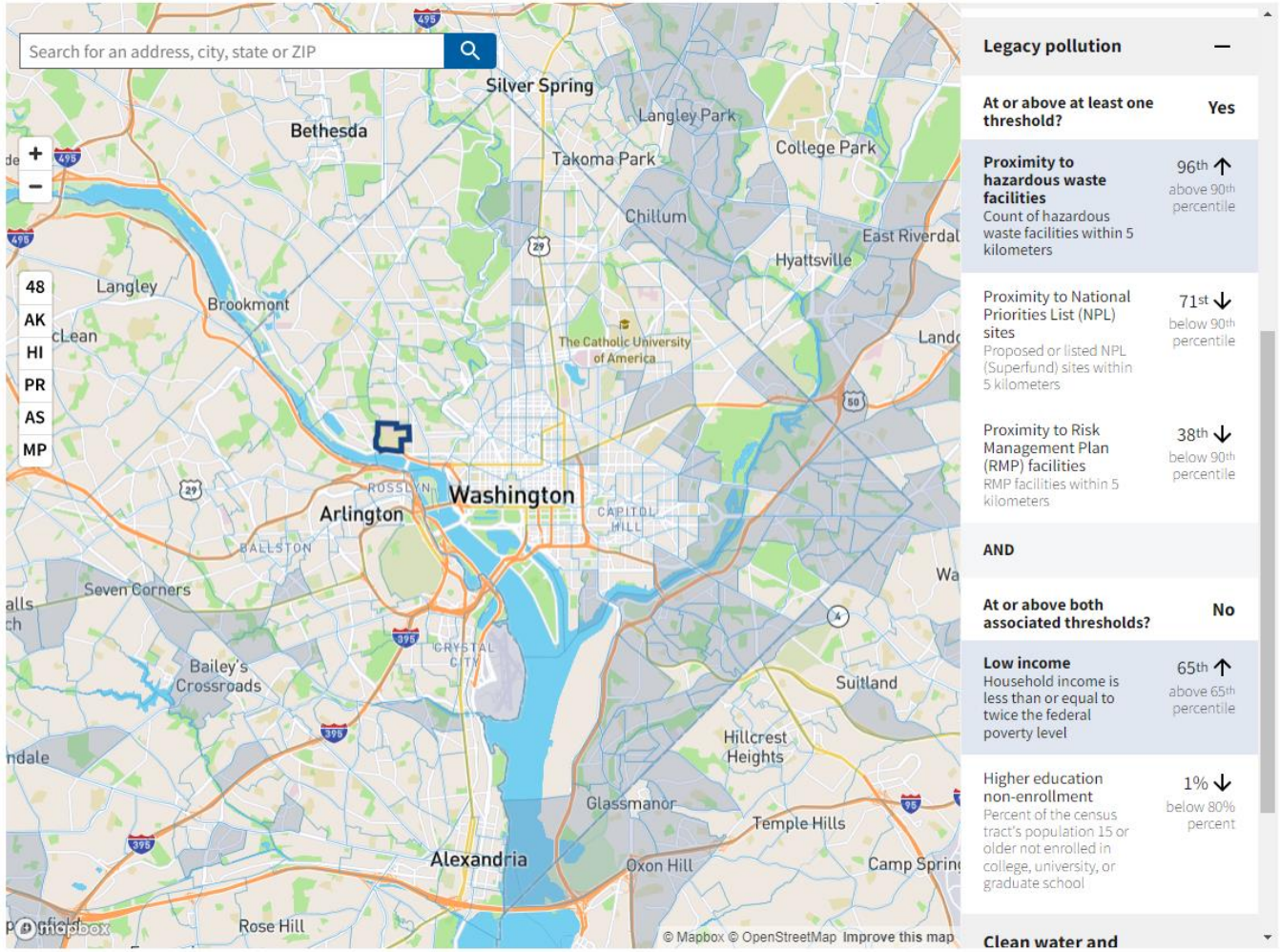
"…the economic value of an ecosystem function or service relates only to the contribution it makes to human welfare, where human welfare is measured in terms of each individual's own assessment of [their] well-being. Of course, this is not the only possible concept of value, nor is it always the most relevant. But for purposes of benefit-cost analysis in assessing policy options and for purposes of determining liability when natural resources have been harmed, this concept has considerable precedence as well as legal standing."

Nancy Bockstael et al. (2000): On Measuring Economic Values for Nature

Normative Assertions in Environmental Policy

- In 2022, the Center for Environmental Quality (CEQ) released a tool to help inform policy decisions related to the human-environment relationship

- The Climate and Economic Justice Screening Tool (CEJST)



Normative Assertions in Environmental Policy

"…A tool that doesn't explicitly account for race risks missing moderate-income communities of color that have nonetheless suffered from disproportionate impacts of pollution due to a history of racist land-use decisions — and bear the public health scars to go along with it." - Sacoby Wilson, Baltimore Sun (2022)

Quality Science for Quality Decisions: Protecting the Scientific Integrity of Benefit–Cost Analysis (here)

By: Dr. Al McGartland (US EPA)

Abstract: Benefit–cost analysis (BCA) provides important science to inform regulatory decision-making. Ideally, the BCA should be based on science, including economics. However, the prominent role of BCA in the policy-making process also creates an incentive to adopt practices that produce results that support a preferred policy. Indeed, rather than informing decision-making, BCA can become a tool for justifying a decision that is made by manipulating results in ways contrary to good science. This article identifies two challenges that threaten the scientific integrity of a BCA because they allow normative and policy judgments to enter into the BCA. The article concludes by identifying actions to help protect the scientific integrity of BCA.

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- Challenge Two: Disregarding the Theoretical Underpinnings of BCA
    - The original theoretical underpinnings of BCA rest on the Kaldor–Hicks criterion—that is, for any given policy option, could those who gain from an economic change compensate the losers and still be better off than before? The use of this criterion to assess such a potential Pareto improvement is a positive scientific exercise that requires relying on a consumer sovereignty principle in assessing benefits and costs.

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- Distributional Analysis and Environmental Justice Issues
  - "Although many economists, lawyers, and policy analysts have advocated for changes to BCA to give greater weight to benefits or costs that accrue to low-income or other disadvantaged subpopulations (Adler 2016), I believe that these important concerns would be buried in the analysis and, ultimately, less transparent."
  - "Trying to address both efficiency and distributional justice issues within one framework shortchanges both issues."

Efficiently Unequal: The Global Rise of Kaldor-Hicks Neoliberalism (here)

By: Dr. Eli Cook

Abstract: This paper offers a history of the "Kaldor-Hicks" concept of economic efficiency from its European birth in the 1930s to its American resurgence in the 1970s to its widespread implementation in the Global South by the early twenty-first century. While philosophers, economists and legal theorists have written widely about Kaldor-Hicks – global-minded intellectual historians have not. As a result, scholars have yet to place its creation, dissemination and ascendency into a broader historical context or examine the reasons behind its global spread. As this paper will demonstrate through the rise of cost-benefit analyses based on "willingness to pay" metrics, while Kaldor-Hicks efficiency was invented by neoclassical economists in the late 1930s, its ascent to policy dominance is part-and-parcel of the neoliberal revolution of the past half century. Linking the history of economic thought with the rise of global neoliberalism, this paper demonstrates how Kaldor-Hicks efficiency emerged as a central pillar of a new, interventionist, wealth-maximizing and market-based form of depoliticized technocratic governance that not only marginalizes distributive concerns but actively exacerbates the problem of global inequality.

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- "Yet despite what many of these practitioners are taught, the Kaldor-Hicks star around which so many regulatory and policy decisions now orbit is not a value neutral or objective methodology but rather, as seen in the Panamanian example above, a powerful – and yet oft-overlooked – intellectual engine of global inequality."

- "[Kaldor] concluded that economists must support reforms that "allow of compensation to balance that loss, and they will still show a net advantage." Yet just like Kaldor this was only a hypothetical balancing test."

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- Ex: The net benefit of saving the Asian elephant (Bandara and Tisdell 2004)
  - Elephants are destructive and sometimes deadly to rural populations in Sri Lanka
  - *Research question:* Is the urban residents' WTP for the conservation of elephants sufficient to compensate farmers for the damage caused by elephants?
  - Yes. "…there is a strong economic case for the conservation of the wild elephant population in Sri Lanka."

Reminders

- Reflection Post # 1
  - **Due Sunday (not Saturday!), Sept 11th by 11:59pm**
  - Listen to 1 of the 2 assigned podcasts
    1. Sensing Air Pollution Exposure in New York City Schools, with Beia Spiller (here)
    2. People, Parks, and Policy, with RFF's Margaret Walls (here)
  - Write 1-2 paragraphs reflecting on the podcast with a specific focus on your experience.
    - Ex: Think about where you grew up. What types of environmental conditions were you exposed to? Did your school have clean air? Do you go visit National Parks with your family? How does that compare to others in your town, city, and state? If/when you moved, did you choose your location on any of these nonmarket amenities? Or will it in the future?
    - I encourage you to think about other ways you might reflect on these. Legal briefs? Poetry? Art projects? Paintings/drawings/music, anything goes!! A major challenge in environmental economics is the lack of diversity in thought and background. Learning to think outside the box is critical for your economics toolkit.