Hitotsubashi University, Graduate School of Economics

International Development Economics II

Instructor: Kazuki Motohashi

Winter 2025
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Course Information

- **Classes:** Tuesday & Friday 17:10-18:55
- **Office hours:** Tuesday 11:45-12:45 (By appointment. If you would like to attend office hours, please contact the below email address by the day before.)
- **Contact:** kazuki.motohashi@r.hit-u.ac.jp

Course Description

This course explores advanced topics at the intersection of development and environmental economics. In the first part of the course, we will review fundamental theories of environmental economics, causal inference methods, and geographic information system (GIS) data and analysis. We will then examine recent economics papers analyzing environmental policy issues in developing countries. By the end of the course, students will develop research proposals on relevant topics.

Learning Objectives

In this course, students will:

1. Learn microeconomic theories and empirical methodologies relevant to analyzing environmental policy issues in developing countries.
2. Explore recent applied literature at the intersection of development and environmental economics.
3. Develop their own research proposals related to development or environmental economics.

Prerequisites

This course is designed for graduate students interested in development economics, environmental economics, or related fields. Students are expected to have completed upper-level undergraduate or graduate courses in microeconomics and econometrics as prerequisites.

Course Materials

Reference (Optional) Textbook for Class 1
Daniel Phaneuf and Till Requate. *A Course in Environmental Economics: Theory, Policy, and Practice*. Cambridge University Press, 2016.

Reference (Optional) Textbook for Class 2
Scott Cunningham. *Causal Inference: The Mixtape*. Yale University Press, 2021.
An online version is also available [link]

Reference Website for Class 3
R as GIS for Economists [link]

Lecture Notes for Classes 1–3 & Mini Lecture Notes for Classes 4–6, 8–11

Course Requirements

Referee Reports

Starting from Class 4, students are required to read the assigned papers (two per class) and prepare brief referee reports (about 400–500 words) for at least one paper in each class. The referee reports must address the following points:

- Brief summary of the paper (e.g., research question, methodology, results)
- Why is the paper important (or not)?
- What did you like or dislike about the paper? What could the authors have done differently?
- Which parts of the paper were unclear or needed further explanation?
- What potential research ideas could you develop based on this paper?

Paper Presentations

Students assigned to present the papers (one student per paper, 20 minutes per paper) are required to prepare slides in PowerPoint or Beamer. The presentation must address the following points:

- Motivation (problem and contribution)
- Research question
- Conceptual framework or theoretical model (if any)
- Study context
- Data
- Empirical strategy (including tests of identifying assumptions)
- Main results (citing main tables and figures)

Both referee reports and presentation slides are due the day before class and should be posted on the Manaba Forum. The instructor will create a discussion thread for each class, so please post your materials in the designated thread.

Research Proposal

Students are also required to develop research proposals related to development or environmental economics, preferably at their intersection. They must prepare a midterm presentation, a final presentation, and a final submission of their research proposals. The presentation duration and the expected length of the final paper will be determined based on the number of enrolled students. The presentations and final paper must include the following parts:

- Motivation (problem and contribution)
- Research question
- Conceptual framework or theoretical model (if any)
- Study context
- Data
- Empirical strategy (including tests of identifying assumptions)
- Preliminary results (optional)

Please feel free to attend office hours to discuss your ideas or the paper with me at any stage of your research. If needed, students may also schedule a meeting with me outside of office hours.

Grading

Evaluation will be based on the following three components:

1. Presentation and referee reports on assigned papers (40%)
2. Contribution to in-class discussions (30%)
3. Research proposal presentation and final paper (30%)

Course Schedule and Reading List

This course will be conducted in a seminar format, requiring students to give presentations and actively participate in discussions starting from Class 4. Presentation assignments will be determined in the first class, so please make sure to attend.

Class 1 (Nov 4): Course Introduction and Theories of Externalities and Pollution Control Instruments

Required readings: Greenstone and Jack (2015)
Optional readings: Phaneuf and Requate, Chapter 1–3; Jayachandran (2022)

Class 2 (Nov 7): Causal Inference Methods (RCT, IV, RDD, DiD)

Optional readings: Cunningham, Chapter 4, 6, 7, 9

Class 3 (Nov 11): GIS Data and Analysis

Required readings: R as GIS for Economists, Chapter 1

Class 4 (Nov 14): Climate Change and Adaptation

Required readings: Dell et al. (2012); Colmer (2021)
Optional readings: Liu et al. (2023); Somanathan et al. (2021); Motohashi (2024)

Class 5 (Nov 18): Environmental Pollution and Health Impacts

Required readings: Garg et al. (2024); Do et al. (2018)
Optional readings: Dias et al. (2023); Rangel and Vogl (2019)

Class 6 (Nov 25): Regulation-Based Approaches to Pollution Control

Required readings: Duflo et al. (2013); He et al. (2020)
Optional readings: Greenstone and Hanna (2014); Barwick et al. (2024); Buntaine et al. (2024); Iqbal et al. (2024)

Class 7 (Nov 28): Midterm Presentation of Research Proposals

Class 8 (Dec 2): Market-Based Approaches to Pollution Control

Required readings: Greenstone et al. (2025); Davis et al. (2014)
Optional readings: Jack et al. (2025)

Class 9 (Dec 5): Adoption of Cleaner Technologies (Water and Sanitation)

Required readings: Kremer et al. (2011); Bennett (2012)
Optional readings: Geruso and Spears (2018); Motohashi (2025); Adukia (2017); Cameron et al. (2022); Meeks (2017)

Class 10 (Dec 9): Natural Resources

Required readings: Alix-Garcia et al. (2013); Sekhri (2014)
Optional readings: Duflo and Pande (2007); Blakeslee et al. (2020); Brander and Taylor (1998)

Class 11 (Dec 12): Political Economy of the Environment

Required readings: Burgess et al. (2012); Lipscomb and Mobarak (2016)
Optional readings: Motohashi and Toya (2024); Dube and Vargas (2013)

Class 12 (Dec 16): Final Presentation of Research Proposals 1

Class 13 (Dec 19): Final Presentation of Research Proposals 2

Class 14: No Class (Makeup Session if Needed)

References

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Alix-Garcia, Jennifer, Craig McIntosh, Katharine RE Sims, and Jarrod R Welch. 2013. "The ecological footprint of poverty alleviation: evidence from Mexico's Oportunidades program." *Review of Economics and Statistics*, 95(2): 417–435.

Barwick, Panle Jia, Shanjun Li, Liguo Lin, and Eric Yongchen Zou. 2024. "From fog to smog: The value of pollution information." *American Economic Review*, 114(5): 1338–1381.

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Blakeslee, David, Ram Fishman, and Veena Srinivasan. 2020. "Way down in the hole: Adaptation to long-term water loss in rural India." *American Economic Review*, 110(1): 200–224.

Brander, James A, and M Scott Taylor. 1998. "The simple economics of Easter Island: A Ricardo-Malthus model of renewable resource use." *American Economic Review* 119–138.

Buntaine, Mark T, Michael Greenstone, Guojun He, Mengdi Liu, Shaoda Wang, and Bing Zhang. 2024. "Does the squeaky wheel get more grease? The direct and indirect effects of citizen participation on environmental governance in China." *American Economic Review*, 114(3): 815–850.

Burgess, Robin, Matthew Hansen, Benjamin A Olken, Peter Potapov, and Stefanie Sieber. 2012. "The political economy of deforestation in the tropics." *The Quarterly Journal of Economics*, 127(4): 1707–1754.

Cameron, Lisa, Paul Gertler, Manisha Shah, Maria Laura Alzua, Sebastian Martinez, and Sumeet Patil. 2022. "The dirty business of eliminating open defecation: The effect of village sanitation on child height from field experiments in four countries." *Journal of Development Economics*, 159, p. 102990.

Colmer, Jonathan. 2021. "Temperature, labor reallocation, and industrial production: Evidence from India." *American Economic Journal: Applied Economics*, 13(4): 101–124.

Davis, Lucas W, Alan Fuchs, and Paul Gertler. 2014. "Cash for coolers: evaluating a large-scale appliance replacement program in Mexico." *American Economic Journal: Economic Policy*, 6(4): 207–238.

Dell, Melissa, Benjamin F Jones, and Benjamin A Olken. 2012. "Temperature shocks and economic growth: Evidence from the last half century." *American Economic Journal: Macroeconomics*, 4(3): 66–95.

Dias, Mateus, Rudi Rocha, and Rodrigo R Soares. 2023. "Down the river: Glyphosate use in agriculture and birth outcomes of surrounding populations." *Review of Economic Studies*, 90(6): 2943–2981.

Do, Quy-Toan, Shareen Joshi, and Samuel Stolper. 2018. "Can environmental policy reduce infant mortality? Evidence from the Ganga Pollution Cases." *Journal of Development Economics*, 133 306–325.

Dube, Oeindrila, and Juan F Vargas. 2013. "Commodity price shocks and civil conflict: Evidence from Colombia." *Review of Economic Studies*, 80(4): 1384–1421.

Duflo, Esther, Michael Greenstone, Rohini Pande, and Nicholas Ryan. 2013. "Truth-telling by third-party auditors and the response of polluting firms: Experimental evidence from India." *The Quarterly Journal of Economics*, 128(4): 1499–1545.

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Greenstone, Michael, and Rema Hanna. 2014. "Environmental regulations, air and water pollution, and infant mortality in India." *American Economic Review*, 104(10): 3038–3072.

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Jayachandran, Seema. 2022. "How economic development influences the environment." *Annual Review of Economics*, 14(1): 229–252.

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Liu, Maggie, Yogita Shamdasani, and Vis Taraz. 2023. "Climate change and labor reallocation: Evidence from six decades of the Indian Census." *American Economic Journal: Economic Policy*, 15(2): 395–423.

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