

Environmental Economics II - Econ 7103¹

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Course Time: TTh 4.30-6pm
Course website on T-Square
Office Hours: by appointment

1 Introduction

Econ 7103 is the second course in the PhD environmental economics sequence. The first course was taught by Emilson Silva and covered many theoretical issues in environmental economics. This half of the sequence will emphasize empirical applications of theoretical concepts and will focus on identification strategies and estimation techniques.

I plan to run this most of this course as a “readings” course. Once we begin this portion of the course, we will cover one paper per class period. With the exception of the first paper we discuss (in which I will lead the discussion), each paper we cover will first be presented by a student as if it were his/her own work, critiqued by another student, and then discussed among all of us as a group. This structure means that I will not do much traditional lecturing. I want you to become proficient at teaching yourself papers and drawing out their main points, strategies, and limitations. I will act as your guide in this process, but as graduate students at the end of your second year you should become proficient at this as you move toward writing your own articles. Secondly, this structure will allow you the opportunity to become a better presenter. Often in economics, the exposition of ideas is just as important as the ideas themselves! One of the most important things when you are on the job market is how you present your paper. It must be clear, concise, and tell a good story. I am intend that the structure of this class will help you develop a good presentation style and get practice at presenting papers.

In addition to giving bi-weekly presentations, you are expected to write a research paper during this class. The final few weeks will be dedicated to each of you presenting your work to the class. In addition, during the semester you will present an extremely abbreviated version of your research idea to the class in an “egg timer” session.² See section 3 for more details.

2 Specifics for each paper presentation

My goal is to have a good discussion about each of the papers we address in class. In order to do this, my plans / expectations are laid out below. This format is similar to the format that papers are

¹This is the preliminary version of the syllabus and may be changed during the semester to accommodate changes in the course.

²An “egg timer” session is a 5 minute presentation, including slides, of your preliminary research idea including the question, ideas about the empirical strategy, and possible data sources.

presented and discussed at the meetings of the National Bureau of Economic Research (NBER) Environmental and Energy Economics program.³

- **Main presentation:** The presenting student will present the paper for 40-45 minutes as if it is his / her own work. This means you need to motivate the paper's research question, explain the strategy in answering the question (including why that strategy was chosen), and then discuss the paper's results and their implications. Since slides (via Powerpoint or Beamer) are the standard for economics talks, I expect them to be used here. During the main presentation, audience members are expected to only ask clarifying questions, not "tough" questions.
- **Discussion:** The discussing student will discuss the paper for 10-15 minutes. The job of the discussant is to help frame the importance of the paper within the literature and/or public policy, discuss the paper's strengths and weaknesses, discuss alternative approaches to the research question, and suggest future work (either to address the paper's weaknesses or to extend the paper's conclusions). Again, use of slides is required. During the discussant's presentation, audience members will only ask clarifying questions. Following this presentation, the "author" will have a chance to respond to the discussant's comments, before we open up for a group discussion.
- **Audience:** The audience (i.e. students not presenting or discussing) is expected to contribute substantially to a group discussion of the paper following the discussant's presentation. To facilitate dialogue, every student who is not either discussing or presenting the paper will send me an email prior to class that lays out: any questions you have regarding the paper's strategy and/or results; concerns you have regarding the paper's strategy / methods; any implications of the paper that you think are worth additional attention; and any ideas for related follow-up research. These emails can then form a basis for our discussion. The emails don't have to be anything formal, just a couple of paragraphs or a list of talking points and questions is fine. Aim for one-half to a full page.

During our group discussion (and during the presentations), please do not be afraid to bring up any aspects of the paper that you find confusing. Some of the papers we cover are quite complex and I do not expect you to understand everything that the authors are doing. In some cases, the authors themselves may not fully understand what they are doing, nor may I. I know some of these papers quite well, but there are others that I am only loosely familiar with, so I will be learning with you.

3 Original research paper

You are expected to write an original research paper during this class. The paper should, like any good research paper include:

1. A convincing introduction as to why the topic you are addressing is important
2. Relate your approach to the topic to the existing literature

³These guidelines are taken from a similar class taught by Ryan Kellogg.

3. Develop an economic model where appropriate
4. Discuss the empirical strategy you will use to estimate your parameters of interest
5. Threats to the validity of your estimates
6. Data you will use
7. Results of your work
8. Discussion of the conclusions from your work

Of course, during the course of the semester you will not likely have enough time to gather, clean, and analyze the data for your paper. Therefore, when writing the results and discussion sections of your paper, you will instead make up the results of your work and discuss these made up results. The hope is that you will be able, in the future, to actually collect, clean, and analyze the data so that you can turn this paper into something of publishable quality. To this end, you must choose a topic that you could pursue with actual data if you had the time. The paper is expected to be related to an environmental topic, though not necessarily one of the topics we discuss in our class.

During one of the class sessions approximately 1/4 of the way through the semester the final half hour of class will be devoted to “egg timer” sessions. During your portion of the egg timer presentation, you will have 5 minutes to present your research ideas, possible empirical strategies, and potential data sources. Portions of your paper will be due throughout the semester as follows:

- January 31: Egg timer presentation
- February 9: Two page write-up of your research idea and possible empirical strategies
- March 13: Draft of beginning of paper due
 - This should motivate your paper, describe your research question, integrate your work with the current literature, and describe your empirical strategy
- April 24, 26
- May 1: Final version of paper

You are strongly encouraged to come talk to me about your research ideas throughout the semester. Talking to others (peers or faculty) about your research can only make your research ideas better. It can be a frightening thing to articulate ideas to others, but often simply the process of talking about them is helpful.

4 Scheduling and grading details

Since there are 5 of you registered for this class, that means each of you will be presenting a paper and discussing a paper approximately every two weeks. Since you all surely have different things that you are interested in, you will be able to choose which papers (within a group) that you will be presenting and discussing.

I want all of you to put effort into developing your presentation style and becoming comfortable presenting papers. This is a skill that will serve you very well in the future. Therefore, 2/3 of your grade will come from your participation in class through your presentation of papers, discussing papers, and participating in class discussions of the papers. The class will be much more helpful to both you and your peers if you actively participate in the discussions. Quite likely, any questions you have about the papers your peers will also have. Raising your questions will help everyone gain a better understanding of the paper. Being silent in the group discussion is not an option.

The final 1/3 of your grade will be determined by your research paper and presentation at the end of the semester. I will provide more details about the grading of the research paper in a separate document.

5 Preliminary Schedule

- Jan 10 Introduction
Jan 12 Research Methods I - Causal Inference: Holland (1986) JASA Discussion (all articles on syllabus)
Jan 17 Research Methods II - Reduced form methods
Jan 19 Research Methods III - Discrete choice methods
Jan 24 Muller, Mendelsohn, and Nordhaus (2011) AER
Jan 26 Borenstein, Bushnell and Wolak (2002) AER
Jan 31 Fabrizio, Rose, and Wolfram (2007) AER
Egg timer session
Feb 2 Bushnell and Mansur (2005) Jnl. Indst. Econ.
Feb 7 Alcott (2011) Resc. and Ener. Econ.
Feb 9 Revelt and Train (1998) ReStat
Two-page research idea write up due
Feb 14 Davis (2008) Rand
Feb 16 Berry, Levinsohn, and Pakes (1995) ECM
Feb 21 Busse, Knittel, Zettelmeyer (2009) WP
Feb 23 Davis and Kahn (2010) WP
Feb 28 Jacobsen (2010) WP - also read Bento et al (2009) AER
Mar 1 Anderson and Sallee (2011) AER
Mar 6 Greenstone (2002) JPE
Mar 8 Davis (2008) JPE
Mar 13 Greenstone and Gallagher (2008) QJE
Mar 15 Ryan (2011) WP
Mar 27 Carlson, et al. (2000) JPE
Draft of beginning of paper due
Mar 29 Fowlie (2010) AER
Apr 3 Fowlie (2009) WP
Apr 5 Bushnell, Chong, and Mansur (2009) WP
Apr 10 Deschenes and Greenstone (2007) AER
Apr 12 Fisher et al. (2012) AER
Apr 17 Chay and Greenstone (2003) QJE
Apr 19 Currie and Neidell (2005) QJE
Apr 24 Research paper presentations
Apr 26 Research paper presentations
May 1 Final version of paper due