The Fletcher School, Tufts University Fall 2010
Location: M200, 15:20-17:20

Instructor’s Information:

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Course Objectives:

One of the primary challenges in development is understanding what works (and what doesn’t) for the world’s poor. While traditional monitoring and evaluation (M&E) can assist in determining whether the program is on the “right track” and has succeeded in meeting its objectives, this does not tell us whether a particular intervention, policy change or program actually causes changes in development outcomes. Yet such information is crucial in the context of limited financial and human resources.

The objective of this course is to provide students with a set of theoretical, econometric and practical skills to estimate the causal impact of one variable on another, with a particular focus on development programs. Examples from the readings explore the causal effects of policies, laws, programs and natural events on a variety of development outcomes in the areas of agriculture, health, education, markets, microfinance and governance. The course will also attempt to go beyond estimating the simple causal effect (often termed the “black box” of impact evaluation, or Evaluation 1.0) to identify the channels through which the causal effect was achieved.

The course will introduce students to a variety of econometric techniques in impact evaluation and a set of analytical skills that will assist them in becoming both consumers and producers of applied empirical research in development. Students will not only learn how to critically analyze evaluation research and gauge how convincing it is in establishing a causal relationship, but also use these skills to develop an evaluation plan and conduct an impact evaluation of an existing development project. The curriculum will be very applied, with weekly case studies of field research drawn from the international development literature.
Learning Outcomes:

By the end of this course, a student should be able to:

- Understand the value and practice of impact evaluation within the development community.
- Understand and apply a variety of quantitative methods for estimating impact, including randomized evaluations, quasi-experimental designs (including natural experiments and regression discontinuity designs) and non-experimental approaches (matching, difference-in-differences, instrumental variables).
- Critically analyze impact evaluation research in economics and gauge the validity of the findings.
- Understand and apply evaluation design for development projects.
- Calculate the costs and benefits to different development interventions.
- Analyze existing data from a development project using impact evaluation techniques.

Pre-requisites:

Introductory econometrics (EIB E213) or an equivalent introductory econometrics course is required. Econometrics may not be taken concurrently with this course, as lectures and assignments will assume a certain level of econometrics and STATA knowledge that will not be covered until later in EIB E213. All relevant econometric concepts will be reviewed as they arise, but the reviews will be brief.

Methods of Instruction:

Concepts will be presented in class via lectures and case studies, which will also serve as the basis for class discussion and small group activities. Lectures will present key topics and summaries of the readings. Case studies will highlight research from Africa, Asia, and South America and will cover programs related to agriculture, education, governance, health and microfinance. Group work will provide hands-on experience with research design and data analysis.

Requirements:

There will be four practical problems sets, three quizzes and one research project. The problem sets will be posted on Blackboard and due one week later.

The research project will be due at the end of the semester, with deliverables at certain points throughout the semester. Students will be offered a choice of datasets from field projects from
Catholic Relief Services or the World Bank, as well as the necessary program documents (project document, logframe, indicators, questionnaires and the evaluation reports). The group will:

- Review the necessary program documents, logical framework and evaluation data
- Choose at least two (2) aspects of the project on which to analyze the causal impact
- Clean the project dataset
- Analyze the project data using one or more of the econometric impact evaluation techniques learned in class
- Present the findings in a final colloquium and write a consultancy report for the organization in question, summarizing the findings and their group’s recommendations for future evaluations of the project

This group project should be thought of as a **in-class consultancy for an actual development organization**. The organizations that provided the datasets have kindly agreed to share their datasets and program documents with the class, and they have identified a contact person who can answer necessary questions (within reason). For this reason, however, we are unable to share these datasets with other parties without the permission of the organization, and we cannot share our findings with other individuals (other than the organization).

Students are expected to prepare for class by completing the required readings before each class, attending each class and actively participating in class discussion. Lecture slide handouts will be posted on Blackboard the day of class.

Certified auditors will be accepted depending upon the class size. Auditors will need to attend each class, complete the readings and hand in all problem sets.

**Participation**

While the technical aspects of the concepts and readings will be presented in lecture format, the course will be focused on discussion of the readings. A formal grade will not be provided for participation, but full and thoughtful class participation (ie, a meaningful contribution to critiques and ideas discussed in class) can improve your grade if you are “on the margin” (ie, an A from an A-, an A - from a B+).

**Grading Criteria**

Grades will be calculated based upon the following criteria:

- Problem sets: 35%
- Quizzes: 25%
- Final project: 40%
Texts and Reading Materials:

While there are no required textbooks for this course, the course will draw heavily from the following readings:


Each class will also draw on several technical and applied readings as specified in the syllabus. Students are responsible for reading the required materials (marked with a *) and are encouraged to read the recommended readings, some of which will be used for in-class case studies. If a required reading is not posted on Blackboard, it can be downloaded from the relevant online journal via the Tufts library.

Important or Unusual Dates

Due to travel to Niger and a seminar obligation, there will be at least two (2) classes during the semester that will need to be rescheduled. Attendance at the make-up classes is *strongly* recommended. In addition, while the final class of the semester is on Tuesday, December 14th, due to the nature of the final project, we will have a colloquium on Friday, December 10th as our final class. Attendance at this last class is required. The dates are listed below.

Thursday, October 7th: Boston College colloquium. Class will be held from 15h20-16h00 due to Aker participation in Thursday, October 7th.
Friday, October 8th: Make-up session for Thursday, October 7th from 9-10:30 a.m.
Thursday, October 21st: Potentially no class due to Aker travel to Niger
Monday, November 8th: Potential make-up class for October 21st
Thursday, November 11th: No class due to Veteran’s Day
Thursday, November 18th: No class due to Aker participation in ICT conference
Monday, November 22nd: Make-up class for November 18th (time TBD)
Thursday, November 25th: No class due to Thanksgiving
Friday, December 10th: Colloquium of class presentations (time TBD): required

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Course Outline:

I. Introduction to impact evaluation in economic development (September 9, 2010)


*Blattman, Chris. February 2008. Evaluation 2.0. Presentation to DFID.


II. Causal Inference and the Econometrics of Impact Evaluation (September 16 and 23, 2010)

*MHE, Chapters 1-2.


*STATA Handout.


III. Randomized Evaluations I: The Basic Econometrics of Randomized evaluations (September 30, 2010)

Quiz 1


IV. Randomized Evaluations II: Evaluations in Practice (October 7/8, 2010)

Problem set 1 due (randomization)

Class will be held from 15h20-16h00 on October 7th. The rest of the topics will be covered in a morning make-up class from 9h30-10h30 on Friday, October 8th


V. Regression Discontinuity (October 14, 2010)

Quiz 2

* MHE, Section 6.1.


VI. Matching and Propensity Score (October 21, 2010)

Note: The October 21st class might need to be rescheduled due to a trip to Niger. This will be confirmed by mid-September.
Problem set 2 due (regression discontinuity design)


MHE, Sections 3.3.1., 3.3.2 and 3.3.3.

VII. Differences in Differences and Staggered Entry (October 28, 2010)

Problem set 3 due (matching)


*Wooldridge, Chapter 13.


VIII. Instrumental Variables (November 4, 2010)

Problem Set 4 due (difference in differences and IV): Due November 15th

*Wooldridge, Chapter 15 (p.510-529 in the most recent version; pp.484-503 in the older version)


MHE Sections 4.1., 4.4.1.-4.4.2.

November 11th: No classes due to Veteran’s Day; make-up class for October 21st on November 8th

November 18th: No classes due to Aker travel; make-up class on November 22nd.

November 24th: No classes due to Thanksgiving

IX. Cost Benefit Calculations (Monday, November 22)

Note: This class is on a Monday and is a make-up class for Thursday, November 18th.


X. **Data Issues: Power Calculations, Attrition and Data Quality (December 2, 2010)**

Quiz 3


Leonard, K. and M. Masatu. 2010. “Using the Hawthorne Effect to Examine the Gap between a Doctor’s Best Possible Practice and Actual Performance.”

XI. **External Validity (December 9, 2010)**


XII. **Group Presentations (Friday, December 10): Symposium on Presentations and Results**

The last day of classes is officially on Tuesday, December 14th. This symposium will serve as the last class and will last three (3) hours to permit every group to present fully, discuss and debate their results.
A Guide to Critically Reading Impact Evaluations

As you read the articles assigned for this course, please keep the following questions in mind:

Main Research Questions

1. What is the main research question being asked in this paper? Do you think that this question is interesting from both a development and policy perspective?
2. What is the main causal question being asked in the paper? (This should be of the form: “What is the effect of $X$ on $Y$?” Make sure that you can identify the $X$ and $Y$)
3. What are the other variables ($Z$) that can affect $Y$? Which of these are observable? Which are unobservable?

Study Design and Identification Strategy

4. How do the authors identify the causal effect of $X$ on $Y$? (Note: Clearly state how the counterfactual is constructed. This should refer to the “treatment group” and “control group”)
5. Who is the treatment group? Who is the control group?
6. If the study used randomization to construct a counterfactual, answer the following questions:
   - What units did the program randomize across?
   - Are there any potential concerns with this randomization approach?
   - Did the randomization “work”? How do you know?

Findings, Internal and External Validity

7. What are the key findings of the paper? Are these effects economically and statistically important?
8. What are the main threats to internal validity of the findings? (Are the falsification tests and robustness checks convincing?)
9. What are the limits to external validity?
10. Would you recommend that this program be expanded to other areas or countries? Why or why not?
11. Is this the best way to answer the causal question of interest? Is there a better methodology, sample or context?