EIB E247: Economic Development and Econometric Impact Evaluation
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 it 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 the 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:

Ravallion, Martin. 2008. "Evaluating Anti-Poverty Programs", Chapter 59, in T. Paul Schultz and John Strauss, ed Handbook of Development Economics, vol.4. Elsevier: Amsterdam, The Netherlands.

Angrist, Joshua D. and S. Pischke. 2009. Mostly Harmless Econometrics: An Empiricists' Companion. Princeton, NJ: Princeton University Press (MHE in reading list below). A reserve copy will be available in Ginn library.

Wooldridge, Jeffrey. Introductory Econometrics: A Modern Approach. 2005 or 2008 edition, South-Western College Publishing.

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: Class will be held from 15h20-16h00 due to Aker participation in Boston College colloquium.
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

Course Outline:

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

*Banerjee, Abhijit. "Making Aid Work." The Boston Review. July/August 2006.

*Glewwe, Paul, Michael Kremer, Sylvie Moulin and Eric Zitzewitz. November 2000. "Retrospective versus Prospective Studies of School Inputs: The Case of Flip Charts in Kenya." NBER Working Paper No. 8018.

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

Center for Global Development. "When will we ever learn? Improving Lives through Impact Evaluation." Report of the Evaluation Gap Working Group, Washington, D.C.: 2006. Pp. 9-33.

Ravallion, Martin. 2008. "Evaluating Anti-Poverty Programs", Chapter 59, in T. Paul Schultz and John Strauss, ed Handbook of Development Economics, vol.4. pp. 3831-3839

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

*MHE, Chapters 1-2.

*Shadish, William, Thomas D. Cook and Donald Campbell. Experimental and Quasi-Experimental Designs for Generalized Causal Inference. Chapter 1, pp. 1-18. Boston: Houghton-Mifflin.

*Ravallion, Martin. 2008. "Evaluating Anti-Poverty Programs", Chapter 59, in T. Paul Schultz and John Strauss, ed Handbook of Development Economics, vol.4. pp. 3788-3801.

*STATA Handout.

Martin Ravallion. 2001. "The Mystery of the Vanishing Benefits: An Introduction to Impact Evaluation." World Bank Economic Review, 15. Pp 2-29.

Winship, Christopher and Stephen L. Morgan 1999. "The Estimation of Causal Effects from Observational Data." Annual Review of Sociology. 25:659–706.

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

Quiz 1

*Duflo, Esther. Scaling Up and Evaluation. Annual World Bank Conference on Development Economics. 2004.

*MHE, Sections 3.2.1, 3.2.2 and 4.4.3.

*Duflo, Esther, Rachel Glennerster, and Michael Kremer. 200). "Using Randomization in Development Economics Research: A Toolkit", Chapter 61, Handbook of Development Economics. Sections 2-5.

*Roodman, David. "The Rapid Rise of Randomistas and the Trouble with RCTs." March 3, 2009. David Roodman's Open Book Microfinance Blog. Center for Global Development.

*Ravallion, Martin. 2008. "Evaluating Anti-Poverty Programs", Chapter 59, in T. Paul Schultz and John Strauss, ed Handbook of Development Economics, vol.4. pp. 3801-3805.

Deaton, Angus. 2009. "Instruments of development: Randomization in the tropics, and the search for the elusive keys to economic development." NBER Working Paper #14690.

Imbens, Guido. 2009. "Better LATE Than Nothing: Some Comments on Deaton (2009) and Heckman and Urzua.". Mimeo, Harvard University.

Levitt, Steven D. April 14, 2009. "Imbens Fires Back at Deaton." New York Times Freakonomics Blog.

Bruhn, Miriam and David McKenzie. October 2009. "In Pursuit of Balance: Randomization in Practice in Development Field Experiments." American Economic Journal-Applied Economics. 1(4): 200-232.

Rodrik, Dani. 2009. "The New Development Economics: We Shall Experiment, but how Shall we Learn?" in What Works in Development, Thinking Big and Thinking Small.

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

*Nelson, Jodi Lee. 2007. Are we Ready for RCTs? New York: International Rescue Committee.

*Banerjee, Abhijit, Esther Duflo, Rachel Glennerster and Cynthia Kinnan. May 2009. "The Miracle of Microfinance? Evidence from a Randomized Evaluation." BREAD Working Paper.

*Aker, Jenny C. "The Myth of Microfinance? Why MFIs Shouldn't Be Freaking Out (Yet)." Center for Global Development Views from the Center Blog.

*Dupas, Pascaline. "Do Teenagers Respond to HIV Risk Information? Evidence from a Field Experiment in Kenya." Forthcoming, American Economic Journal: Applied Economics. (Please read all sections except for Section 3 and Section 5.5).

*Ichino, Nahomi and Matthias Schundeln. 2009. "Deterring or Displacing Electoral Irregularities? Spillover Effects of Observers in a Randomized Field Experiment in Ghana." Unpublished mimeo.

Aker, Jenny C, Christopher Ksoll and Travis J. Lybbert. 2010. "ABC, 123: The Impact of a Mobile Phone Literacy Program on Educational Outcomes." CGD Working Paper.

Cohen, Jessica and Pascaline Dupas. 2010. "Free Distribution or Cost Sharing? Evidence from a Randomized Malaria Prevention Experiment" Quarterly Journal of Economics. 125(1): 1-45.

V.   Regression Discontinuity (October 14, 2010)

Quiz 2

*MHE, Section 6.1.

*Ravallion, Martin. 2008. "Evaluating Anti-Poverty Programs", Chapter 59, in T. Paul Schultz and John Strauss, ed Handbook of Development Economics, vol.4. pp. 3812-3815.

*Manacorda, Marco, Edward Miguel and Andrea Vigorito. 2010. "Government Transfers and Political Support."   Forthcoming, American Economic Journal: Applied Economics.

Imbens, Guido and Thomas Lemieux. 2008. "Regression discontinuity designs: A guide to practice." Journal of Econometrics. 142: 615–635.

Lee, David and Thomas Lemieux. 2009. "Regression Discontinuity Designs in Economics." NBER Working Paper #14723.

Angrist, Joshua and Victor Lavy. 1999. "Using Maimonides Rule to Estimate the Effect of Class Size on Scholastic Achievement." The Quarterly Journal of Economics, 114(2): pp. 533-575.

Duflo, Esther, Pascaline Dupas, and Michael Kremer. 2010. "Peer Effects and the Impact of Tracking: Evidence from a Randomized Evaluation in Kenya." (In-class case study).

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)

*Ravallion, Martin. 2008. "Evaluating Anti-Poverty Programs", Chapter 59, in T. Paul Schultz and John Strauss, ed Handbook of Development Economics, vol.4. pp. 3805-3812.

*Caliendo, Marco and Sabine Kopeinig. 2005. "Some Practical Guidance for the Implementation of Propensity Score Matching." IZA Discussion Paper No. 1588. (Please read pp 1-16).

*Jalan, Jyotsna and Martin Ravallion. Does Piped Water Reduce Diarrhea for Children in Rural India? Journal of Econometrics. January 2003, 153-173.

*Bernard, Tanguy, Alemayehu Seyoum Taffesseb, Eleni Gabre-Madhin. 2008. "Impact of cooperatives on smallholders' commercialization behavior: evidence from Ethiopia." Agricultural Economics 39(2): 147–161.

*Gotland, E. M., Sadoulet, E., De Janvry, A., Murgai, R., Ortiz, O., 2004. "The impact of farmer field schools on knowledge and productivity: A study of potato farmers in the Peruvian Andes." Economic Development and Cultural Change 53: 63–92.

Van de Walle, Dominique and Ren Mu. 2007. "Fungibility and the Flypaper Effect of Project Aid: Microevidence for Vietnam." Journal of Development Economics. 84: 667-685.

Deheija, Rajeev H. and Sadek Wahba. 2002. "Propensity Score Matching Methods for Non-Experimental Studies." The Review of Economics and Statistics, 84(1): 151-161.

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)

*Ravallion, Martin. 2008. "Evaluating Anti-Poverty Programs", Chapter 59, in T. Paul Schultz and John Strauss, ed Handbook of Development Economics, vol.4. pp. 3815-3823.

*Wooldridge, Chapter 13.

*Bleakley, Hoyt. April 2010. Malaria Eradication in the Americas: A Retrospective Analysis of Childhood Exposure. American Economic Journal: Applied Economics. 2(2): 1-45.

*Aker, Jenny. 2010. July 2010. "Information from Markets Near and Far: The Impact of Mobile Phones on Grain Markets in Niger." American Economic Journal: Applied Economics. 2(July 2010): 46-59.

de Janvry, Alain, Craig McIntosh, and Elisabeth Sadoulet, "The Supply and Demand Side Impacts of Credit Market Information", forthcoming in Journal of Development Economics

Galiani, Sebastian, Paul Gertler, and Ernesto Schargrodski. 2005. "Water for Life: The Impact of the Privatization of Water Services on Child Mortality." Journal of Political Economy. 113(1).

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)

*Ravallion, Martin. 2008. "Evaluating Anti-Poverty Programs", Chapter 59, in T. Paul Schultz and John Strauss, ed Handbook of Development Economics, vol.4. pp. 3823-3831.

*Ravallion, M.,Wodon, Q. (2000). "Does child labor displace schooling? Evidence on behavioral responses to an enrollment subsidy". Economic Journal 110, C158–C176.

*Duflo, E. (2003). "Grandmothers and granddaughters: Old age pension and intrahousehold allocation in South Africa". World Bank Economic Review 17 (1), 1–26.

Duflo, E., Pande, R. (2007). "Dams". Quarterly Journal of Economics 122 (2), 601–646.

Werker, Eric D., Faisal Z. Ahmed and Charles Cohen. "How is Foreign Aid Spent? Evidence from a Natural Experiment." American Economic Journal: Macroeconomics 1, No. 2 (July 2009): 225-244.

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.

*Evans, David K. and Ghosh, Arkadipta. June 2008. Prioritizing Educational Investments in Children in the Developing World. WR-587. Rand Corporation: Santa Monica, CA.

*J-PAL March 30, 2010. J-PAL Cost Effectiveness Metholodogy. Cambridge, MA: MIT.

*Dupas, Pascaline. "Do Teenagers Respond to HIV Risk Information? Evidence from a Field Experiment in Kenya." Forthcoming, American Economic Journal: Applied Economics. (Please read only Section 5.5).

Kremer, Michael, Edward Miguel and Rebecca Thornton, "Incentives to Learn". Review of Economics and Statistics.

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

Quiz 3

*Baird, Sarah, Joan Hamory, and Edward Miguel. [Tracking, Attrition and Data Quality in the Kenya Life Panel Survey Round 1](#).

Zwane, Alix et al. "The Risk of Asking : Being Surveyed can Affect Later Behavior."

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)

*Olken, Benjamin. April 2007. [Monitoring Corruption: Evidence from a Field Experiment in Indonesia](#). Journal of Political Economy. 200-249.

*Ferraz, Claudio and Frederico Finan. May 2008. [Exposing Corrupt Politicians: The Effects of Brazil's Publicly Released Audits on Electoral Outcomes](#). Quarterly Journal of Economics, 703-745.

*Bjorkman, Martina and Jakob Svensson. June 2007. [Power to the People: Evidence from a Randomized Field Experiment of a Community-Based Monitoring Project in Uganda](#). Community-Based Monitoring of Primary Health Care PCEPR Working Paper # 6344.

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?