APPLIED ECONOMETRICS FOR PUBLIC POLICY ANALYSIS
SYLLABUS

Course code: Econ 4960-01
Term: Fall 2013
Location: Tilton 307
Time: W 3–5:30 p.m.
Website: `http://econ.tulane.edu/kfinlay/econ4960`
Credit: 3 undergraduate credit hours

Instructor: Prof. Keith Finlay
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               Tulane University
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Office hours: Office hours are by appointment only, but appointments are available almost every weekday. You can make an appointment online: `http://kfinlay.ycb.me`.

COURSE DESCRIPTION

The objective of this course is for students to learn contemporary techniques for identifying causal effects in economic and public policy analysis. We will first discuss the classical experimental design, its primary features of random selection and assignment, and why it is usually unfeasible in the social sciences. The majority of the course will be spent on techniques used to approximate random selection and assignment, often called quasi-experimental designs.

The goal of the course is for students to understand when these techniques can be useful, how they are different, and how to implement them. Research topics will include policies affecting labor market discrimination, education, immigration, criminal justice, and other topics as time permits. Students will be evaluated based on exams, replication of existing research, and peer review.

PREREQUISITES

Students should have a solid background in econometrics or statistics. Students will also implement a number of research strategies using the statistical software Stata. Having experience with Stata is not a requirement, since we will learn how to use it as part of the course.

COURSE OBJECTIVES

The primary objective of this course is for students to understand the difficulty in inferring causality in social scientific research. Complementary course objectives consist of:

– implementing a variety of econometric tools and research strategies for causal inference,

– developing programming skills (in the statistical software package Stata), and

– improving expository writing while describing research results.

PROGRAM OUTCOMES

This course contributes to the outcomes of the economics major by teaching students how to understand the difficulty in inferring causality in social scientific research.

LEARNING OUTCOMES

After completing this course, students will be able to

– implement a variety of econometric tools and research strategies for causal inference,

– program (in the statistical software package Stata), and

– describe research results.

EVALUATION CRITERIA

Course objectives are measured through the course assignments that assess acquired substantive knowledge and analytical ability via written work. See below under "Coursework, Grades, and Grading Policies" and "Exams".

TEXTBOOKS

The required text is:

– Khandker, Shahidur, Gayatri Koolwal, and Hussain Samad. 2010. Handbook on Impact Evaluation: Quantitative Methods and Practices. Washington, DC: World Bank.

You can download this book following the link in the list of references.

– Angrist, Joshua D. and Jörn-Steffen Pischke. 2009. *Mostly Harmless Econometrics: An Empiricist's Companion*. Princeton University Press.

You can purchase it online here:

– http://www.amazon.com/Mostly-Harmless-Econometrics-Empiricists-Companion/dp/0691120358

You will also need an introductory econometrics textbook. I will provide the necessary sections of the following text:

– Wooldridge, Jeffrey. 2005. *Introductory Econometrics: A Modern Approach*. Cincinnati: South-Western College Publishers.

It may also be helpful to have access to an undergraduate labor economics textbook, such as:

– Ehrenberg, Ronald and Robert Smith. 2005. *Modern Labor Economics: Theory and Public Policy*. Harlow: Addison Wesley.

or

– Borjas, George J. 2007. *Labor Economics* (4th edition). New York: McGraw-Hill College.

All other readings are available online, either through a link to an electronic journal or through library e-reserve. Links are on the course website, which will be updated as the semester progresses. Please keep track of the updates. Some of the readings are technical pieces from economics journals. The degree to which a student needs to be familiar with the details of a paper will be clear from the emphasis given to the paper in lecture.

Coursework, Grades, and Grading Policies

Final course grades will be based on the following breakdown:

– Midterm exam (20%)

– Replication projects (3 x 10%)

– Peer assessment (10%)

– Seminar attendance and evaluation (10%)

– Final exam or replication project (30%)

This course will involve a combination of individual and group work. In fact, much of our application of the techniques discussed in class will be performed in class in a group workshop setting. Thus, attendance is crucial. At the beginning of the course, students will review statistics and econometrics, and they will be tested on this material. There will be one midterm exam about two-thirds of the way through the course. Three group projects will require the partial replication of the papers discussed in class. A final individual project will allow students more freedom to choose the topic and method to examine.

You are required to attend three Department of Economics seminars. The schedule for these seminars can be found at `http://econ.tulane.edu/seminars.shtml`. Of those three, you must choose one with significant empirical content and submit a two-page evaluation of the identification challenges in the paper and any suggestions you have for the author. If some academic responsibility would preclude you from attending at least three of the seminars, you must inform me during the first week of class, and I will give you an alternative assignment.

Since much of the work for this class will be performed in groups and not all members may contribute equally to the projects, I will ask students to rate their classmates at the end of the semester. Your peer evaluation score will be the average of your classmates rating of your contributions. Bear in mind that you will be doing yourself (and other members of your group) a disservice if your rating of your contribution and/or the contribution of other group members is inaccurate. These evaluations are confidential and your ratings should not be shared with your group members. I reserve the right to discard valuations that are suspect.

Exams

The exams may cover any material from the assigned readings in the text, as well as any additional material that I cover in lecture. Students will be excused from the midterm exams only for valid medical or family emergencies. These excuses must be identified before the midterm and students must produce signed evidence verifying the reason why they cannot attend. If it is missed for a valid reason, weight will be reassigned from the other exams; otherwise, zero credit will be given.

The final exam is scheduled for **Monday, December 9, 1:00–4:00 p.m.** The final exam will cover material from the entire semester. No makeup final exams will be allowed. If you will not be available during this time, please enroll in another course.

Students may ask that an exam be re-graded if they feel that a mistake has been made, by giving me a request in writing explaining their reasoning. The entire exam will be regraded and, after re-reading the exam, the grade may rise or fall. Of course, if a simple mistake has been made in adding up points, students should bring this to my attention and the grade will be changed.

SUPPLEMENTARY WORK FOR WRITING INTENSIVE OPTION

Students who wish to take this course with the writing intensive option must complete the individual replication assignment. In addition, these students will write a more extensive critique of the chosen replication paper.

ACADEMIC HONESTY

All students must be familiar with and abide by Tulane's Code of Academic Conduct, which is available online at `http://tulane.edu/college/code.cfm`. I take matters of academic honesty very seriously. A student who commits academic dishonesty disrespects the hard work of his classmates. Any student found cheating, plagiarizing, or colluding during the course will be referred to the Associate Dean of Newcomb-Tulane College. If you fall behind in your coursework and even feel tempted to be dishonest, please see me first so that we find a way for you to turn in your work late (but with some penalty). That said, students are encouraged to study together and to collaborate on homework, although each student must write up her own homework.

STATA AND COMPUTER USE

The course will require use of the econometric package Stata. A student version is available in the bookstore for $40. Stata Corp. has a list of excellent web-based tutorials for learning how to use Stata:

– http://www.stata.com/links/resources1.html

If you decide to use the Wooldridge econometrics text, there is a useful resource for working through the problems in Stata at the following site:

– http://fmwww.bc.edu/gstat/examples/wooldridge/wooldridge.html

SCHEDULE AND TOPICS

The following is a rough outline of the topics we will cover in class:
– Statistics and econometrics review (3 weeks)
– Causal inference and experimental methods (1 week)
– Labor market equilibrium: immigration (1 week)
– Labor market equilibrium: mandated benefits (1 week)
– Returns to education: internal (1 week)
– Returns to education: external (1 week)
– Discrimination (1 week)
– Criminal justice (1 week)
– Other topics (4 weeks)

SCHEDULE OF TOPICS AND READINGS

This is a list of broad topics and the individual readings we will cover. Links to the readings can be found at the end of the syllabus.
– Problem of causal inference
    – Taubes (2007)

- Silberman (2009)
- Khandker et al. (2010, ch. 1)
- `http://www.blog.sethroberts.net/2007/09/16/how-accurate-is-epidemiology-part-2`
- (Statistics and econometrics review.)
- Khandker et al. (2010, ch. 11)
- Khandker et al. (2010, ch. 2)
- Holland (1986)

– Randomization and randomized control trials
- Khandker et al. (2010, ch. 3)
- Goldin and Rouse (2000)
- Bertrand and Mullainathan (2004)
- Khandker et al. (2010, ch. 12)

– Quasi-experiments
- Khandker et al. (2010, ch. 5)
- Card (1990)
- Meyer (1995)
- Gruber (1994)
- Khandker et al. (2010, ch. 14)

– Midterm exam (Wednesday, October 16, 3:00–4:00 p.m.)

– Instrumental variables
- Khandker et al. (2010, ch. 6)
- Permutt and Hebel (1989)
- Angrist and Krueger (1991)
- Khandker et al. (2010, ch. 15)

– Regression discontinuity
- Khandker et al. (2010, ch. 7)
- Card et al. (2008)
- Imbens and Lemieux (2008)
- Khandker et al. (2010, ch. 16)

– Matching
- Khandker et al. (2010, ch. 4)
- Angrist (1998)
- Khandker et al. (2010, ch. 13)

– Variance estimation
- Moulton (1990)

– Replication papers
- Angrist and Evans (1998)

- Card (1993)
- Card and Krueger (1994)
- Fehr and Goette (2007)
- Gelbach (2002)
- Thornton (2008)

– Final exam (Monday, December 9, 1:00–4:00 p.m.)

ARTICLES AND BOOKS ON THE SYLLABUS

Angrist, Joshua D. 1998. Estimating the Labor Market Impact of Voluntary Military Service Using Social Security Data on Military Applicants. *Econometrica* 66(2): 249–288.
http://dx.doi.org/10.2307/2998558

Angrist, Joshua D. and William Evans. 1998. Children and Their Parents' Labor Supply: Evidence from Exogenous Variation in Family Size. *American Economic Review* 88(3): 450–477.
http://www.jstor.org/stable/116844

Angrist, Joshua D. and Alan B. Krueger. 1991. Does Compulsory School Attendance Affect Schooling and Earnings? *Quarterly Journal of Economics* 106(4): 979–1014.
http://dx.doi.org/10.2307/2937954

Bertrand, Marianne and Sendhil Mullainathan. 2004. Are Emily and Greg More Employable than Lakisha and Jamal? A Field Experiment on Labor Market Discrimination. *American Economic Review* 94(4): 991–1013.
http://dx.doi.org/10.1257/0002828042002561

Card, David. 1990. The Impact of the Mariel Boatlift on the Miami Labor Market. *Industrial and Labor Relations Review* 43(2): 245–257.
http://www.jstor.org/stable/2523702

———. 1993. Using Geographic Variation in College Proximity to Estimate the Return to Schooling. *Working Paper 4483*, National Bureau of Economic Research.
http://www.nber.org/papers/w4483

Card, David, Carlos Dobkin, and Nicole Maestas. 2008. The Impact of Nearly Universal Insurance Coverage on Health Care Utilization: Evidence from Medicare. *American Economic Review* 98(5): 2242–2258.
http://www.jstor.org/stable/29730170

Card, David and Alan B. Krueger. 1994. Minimum Wages and Employment: A Case Study of the Fast-Food Industry in New Jersey and Pennsylvania. *American Economic Review* 84(4): 772–793.
http://www.jstor.org/stable/2677856

Fehr, Ernst and Lorenz Goette. 2007. Do Workers Work More if Wages Are High? Evidence from a Randomized Field Experiment. *American Economic Review* 97(1): 298–317.
http://www.jstor.org/stable/30034396

Gelbach, Jonah B. 2002. Public Schooling for Young Children and Maternal Labor Supply. *American Economic Review* 92(1): 307–322.
http://www.jstor.org/stable/3083335

Goldin, Claudia and Cecilia Rouse. 2000. Orchestrating Impartiality: The Impact of "Blind" Auditions on Female Musicians. *American Economic Review* 90(4): 715–741.
http://www.jstor.org/stable/117305

Gruber, Jonathan. 1994. The Incidence of Mandated Maternity Benefits. *American Economic Review* 84(3): 622–641.
http://www.jstor.org/stable/2118071

Holland, Paul W. 1986. Statistics and Causal Inference. *Journal of the American Statistical Association* 81(396): 945–960.
http://www.jstor.org/stable/2289064

Imbens, Guido W. and Thomas Lemieux. 2008. Regression Discontinuity Designs: A Guide to Practice. *Journal of Econometrics* 142(2): 615–635.
http://dx.doi.org/10.1016/j.jeconom.2007.05.001

Khandker, Shahidur R, Gayatri B Koolwal, and Hussain A Samad. 2010. *Handbook on Impact Evaluation: Quantitative Methods and Practices*. Washington, DC: World Bank.
http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2009/12/10/000333037_20091210014322/Rendered/PDF/520990PUB0EPI1101Official0Use0Only1.pdf

Meyer, Bruce D. 1995. Natural and Quasi-Experiments in Economics. *Journal of Business and Economic Statistics* 13(2): 151–161.
http://www.jstor.org/stable/1392369

Moulton, Brent R. 1990. An Illustration of a Pitfall in Estimating the Effects of Aggregate Variables on Micro Units. *Review of Economics and Statistics* 72(2): 334–338.
http://www.jstor.org/stable/2109724

Permutt, Thomas and J. Richard Hebel. 1989. Simultaneous-Equation Estimation in a Clinical Trial of the Effect of Smoking on Birth Weight. *Biometrics* 45(2): 619–622.
http://www.jstor.org/stable/2531503

Silberman, Steve. 2009. Placebos Are Getting More Effective. Drugmakers Are Desperate to Know Why.
http://www.wired.com/print/medtech/drugs/magazine/17-09/ff_placebo_effect

Taubes, Gary. 2007. Do We Really Know What Makes Us Healthy?
http://www.nytimes.com/2007/09/16/magazine/16epidemiology-t.html?pagewanted=print

Thornton, Rebecca L. 2008. The Demand for, and Impact of, Learning HIV Status. *American Economic Review* 98(5): 1829–1863.
http://www.jstor.org/stable/29730154