

ED 944
Advanced Economic and Econometric Applications to Education
Research I

Prof. Scott Imberman
Fall 2012

Synopsis: In this course we will explore the theory behind and applications of the economics of education with a focus on understanding the use of econometric techniques in education research and the analysis of education policy issues. The course will be a survey of readings in the economics of education. Topics will include but are not limited to externalities, public goods, human capital theory, education production functions and current issues in education such as accountability, incentive pay and school choice. This course is intended to be the first part of a sequence with ED 945. Thus, upon completion of both courses students will be required to produce an original research paper on a topic in education that uses econometric techniques.

Meetings: This course will be held Mondays and Wednesdays from 12:40PM to 2:00PM. In Wells A306.

Office Hours: Mondays and Wednesdays 10:00am – 11:30am or by appointment.

Requirements:

- (1) Referee report. At one point during the course you will be required to write a referee report for an assigned working paper. This will be worth 15% of your grade.
- (2) Class participation. All students are expected to attend class regularly, read all assigned papers prior to class, and participate. Classes will be a mix of lecture and back-and-forth discussion about the readings. Students are expected to participate in all discussions. This will account for 20% of your grade.
- (3) Presentation. Students will work in pairs to produce a 15 minute presentation as one would present at a conference on one of the non-bolded papers listed below. Presentations will be made during the last three classes and will also include question and answer sessions. Students must choose the paper they will present in consultation with me by November 7. This will account for 15% of your grade.
- (4) Paper Proposal. By the end of the class students will produce a 10 – 15 page (not including references, tables and figures), double spaced paper proposal. This proposal is intended to serve as a starting point for working on a full research paper for ED 945, though you are not required to keep the same topic in that class.

The proposal will include a formulation of a question you wish to answer, a full literature review that places your research in the literature, a discussion of what data you will use, a discussion of your planned empirical strategy, and what you expect you might find. The proposal will be worth 50% of your grade. Any paper that exceeds the page limit will not be accepted until it is brought into line with the page limitation. The proposal is due on the last day of class and should be submitted to me electronically via email in a PDF, Microsoft Word, or similar word processing document. I highly recommend that you meet with me at least once during the semester to discuss your choice of paper topic.

Readings: I will inform you each week what readings will be discussed the following week. You are expected to have finished all assigned readings in **bold** prior to the first class of the week. Additional readings that are not bolded are recommended but will not be discussed in class. I will also assign supplementary readings from Mostly Harmless Econometrics by Angrist & Pischke (Princeton University Press, ISBN 978-0-691-12035-5) and Econometric Analysis of Cross Section and Panel Data by Wooldridge based on what econometric strategies are used in the assigned papers.

****NOTE THAT THE SYLLABUS IS PRELIMINARY AND READINGS AND TOPICS COVERED MAY CHANGE****

1. Public Good Provision and Crowd-Out

Andreoni, James and Abigail Payne. 2003. "Do Government Grants to Private Charities Crowd Out Giving or Fundraising?" *American Economic Review* 93(3): 792-812.

Bergstrom, Theodore, Laurence Blume and Hal Varian. 1986. "On the Private Provision of Public Goods," *Journal of Public Economics* 29: 25-49.

Bernheim, B. Douglas. 1986. "On the Voluntary and Involuntary Provision of Public Goods." *The American Economic Review* 76(4): 789-793.

Samuelson, Paul A. 1954. "The Pure Theory of Public Expenditure," *Review of Economics and Statistics*, 36 (November): 387-389.

Gruber, Jonathan and Daniel M. Hungerman. 2007. "Faith-based Charity and Crowd-out During the Great Depression." *Journal of Public Economics* 91(5-6): 1043-1069.

Gordon, Nora, 2004. "Do Federal Grants Boost School Spending? Evidence from Title I," *Journal of Public Economics*, 88 (9-10), 1771-1792

Econometric Background (Instrumental Variables) – Angrist & Pishke Chapter 4;
Wooldridge, Chapter 5

2. Education as an Externality and the Social Returns to Education

Acemoglu, Daron and Joshua Angrist, 2001. “How Large are Human-Capital Externalities? Evidence from Compulsory-Schooling Laws”, in NBER Macroeconomics Annual 2000, MIT Press.
<http://www.nber.org/chapters/c11054.pdf>

Cropper, Maureen and Wallace Oates. 1992. “Environmental Economics: A Survey.” *Journal of Economic Literature*, 30(2): 675-740.

Dee, Thomas, 2004. “Are There Civic Returns to Education?” *Journal of Public Economics* 88 (9-10).

Moretti, Enrico. 2004. “Estimating the Social Return to Higher Education: Evidence from Longitudinal and Repeated Cross-Sectional Data.” *Journal of Econometrics* 121.

Weitzman, Martin. 1974. “Prices versus Quantities.” *Review of Economic Studies*, 41(4): 477-91.

3 Human Capital

3.1 Private Returns to Educational Attainment

Angrist, Joshua and Alan Krueger. “Does Compulsory School Attendance Affect Schooling and Earnings?” *The Quarterly Journal of Economics*, Vol. 106, No. 4 (Nov., 1991), pp. 979-1014

Bound, John, David A. Jaeger and Regina M. Baker. “Problems with Instrumental Variables Estimation When the Correlation Between the Instruments and the Endogeneous Explanatory Variable is Weak” *Journal of the American Statistical Association*, Vol. 90, No. 430 (Jun., 1995), pp. 443-450

Ashenfelter, O. and C. Rouse. 1998. “Income, Schooling, and Ability: Evidence from a Sample of Identical Twins,” *Quarterly Journal of Economics* 253-84.

Kane, T. and C.E. Rouse (1995) “Labor-Market Returns to Two- and Four-Year College.” *American Economic Review* 85(3): 600-614.

Hungerford, T. and G. Solon (1987) “Sheepskin Effects in the Returns to Education.” *Review of Economics and Statistics* 69(1): 175-177.

Oreopoulos, Philip. “Estimating Average and Local Average Treatment Effects of Education When Compulsory Schooling Laws Really Matter” *The American Economic Review* , Vol. 96, No. 1 (Mar., 2006), pp. 152-175

Oreopoulos, Philip, Marianne E. Page, and Ann Huff Stevens. “The Intergenerational Effects of Compulsory Schooling” *Journal of Labor Economics* , Vol. 24, No. 4 (October 2006), pp. 729-760

Econometrics Background (Regression-Discontinuity) – Angrist & Pischke Chapter 6; Imbens, Guido and Thomas Lemieux, 2008. “Regression Discontinuity Designs: A Guide to Practice.” *Journal of Econometrics* 142(2): 615-635.

3.2 Private Returns to Education Quality

Card, David and Alan B. Krueger. “Does School Quality Matter? Returns to Education and the Characteristics of Public Schools in the United States” *The Journal of Political Economy*, Vol. 100, No. 1. (Feb., 1992), pp. 1-40.

Chetty, Raj, John Friedman and Jonah Rockoff. 2012. “The Long-Term Impacts of Teachers: Teacher Value-Added and Student Outcomes in Adulthood.” NBER Working Paper No. 17699.

Chetty, Raj, et. al “How Does Your Kindergarten Classroom Affect Your Earnings? Evidence from Project STAR,” *Quarterly Journal of Economics*, 2011.

Hoekstra, M. (2009). “The Effect of Attending the State Flagship University on Earnings: A Discontinuity-Based Approach.” *Review of Economics and Statistics*, 91(4): 717-724.

Betts, Julian R. “Does School Quality Matter? Evidence from the National Longitudinal Survey of Youth.” *The Review of Economics and Statistics* , Vol. 77, No. 2 (May, 1995), pp. 231-250

3.3 Returns to Cognitive and Non-Cognitive Skills

Dee, Thomas and Martin West. “The Non-Cognitive Returns to Class Size.” *Educational Evaluation and Policy Analysis*, March 2011 vol. 33 no. 1 23-46

Heckman, James J., Jora Stixrud and Sergio Urzua. "The Effects Of Cognitive and Noncognitive Abilities On Labor Market Outcomes and Social Behavior," *Journal of Labor Economics*, 2006, v24(3,Jul), 411-482.

Heckman, James J. and Yona Rubinstein “The Importance of Noncognitive Skills: Lessons from the GED Testing Program” *The American Economic Review P&P*, Vol. 91, No. 2, (May, 2001), pp. 145-149

4 Education Production

Hanushek, Eric A.. 1986. "The Economics of Schooling: Production and Efficiency in Public Schools." *Journal of Economic Literature* 24(3): 1141-1177.

4.1 Class Size

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

Kreuger, Alan. 1999. "Experimental Estimates of Education Production." *The Quarterly Journal of Economics* 114(2): 497-532.

Hoxby, Caroline M., 2000. "The Effect of Class Size on Student Achievement: New Evidence from Natural Population Variation." *Quarterly Journal of Economics* 115(4): 1239-1285

Econometrics Background (Experiments): Angrist & Pishke, Chapter 2

4.2 Peer Effects and Tracking

Angrist, Joshua and Kevin Lang. 2004. "Does Schooling Integration Generate Peer Effects? Evidence from Boston's Metco Program," *American Economic Review*, 94(5): 1613-1634.

Carell, Scott, Richard Fullerton, and James West. 2009 "Does Your Cohort Matter? Measuring Peer Effects in College Achievement." *Journal of Labor Economics*, 27(3): 439-464.

Carrell, Scott, and Mark Hoekstra. 2010. "Externalities in the Classroom: How Children Exposed to Domestic Violence Affect Everyone's Kids," *American Economic Journal – Applied Economics* 2(1): 211-228.

Duflo, Esther, Pascaline Dupas, and Michael Kremer. 2011. "Peer Effects and the Impact of Tracking: Evidence from a Randomized Experiment in Kenya" *American Economic Review* 101(5).

Lazear, Edward. 2001. "Educational Production." *Quarterly Journal of Economics* 116(3): 777-803.

Imberman, Scott, Adriana Kugler, and Bruce Sacerdote. 2012. "Katrina's Children: Evidence on the Structure of Peer Effects from Hurricane Evacuees" *American Economic Review*, 102 (5).

Hoxby, Caroline and Gretchen Weingarth. 2006. "Taking Race Out of the Equation: School Reassignment and the Structure of Peer Effects." Presented at the 2006 American Economics Association Annual Meetings at http://www.aeaweb.org/annual_mtg_papers/2006/0108_1300_0803.pdf.

Manski, Charles F, 1993. "Identification of Endogenous Social Effects: The Reflection Problem." *Review of Economics and Statistics*, 60: 531-542.

Sacerdote, Bruce. 2001. "Peer Effects with Random Assignment: Results from Dartmouth's Roommates." *Quarterly Journal of Economics*, 116(2): 681-704.

Econometrics Background (Difference-In-Differences & Fixed-Effects) – Angrist & Pishke Chapter 5; Wooldridge Chapters 10 & 11

4.3 Teacher Quality

Rivkin, Steven, Eric Hanushek and John Kain, 2005. "Teachers, Schools and Academic Achievement." *Econometrica* 73(2): 417-458.

Rothstein, J. 2010. "Teacher Quality in Education Production: Tracking, Decay and Student Achievement." *Quarterly Journal of Economics* 125(1): 175-214.

Rothstein, J. 2010. "Student Sorting and Bias in Value-Added Estimation: Selection on Observables and Unobservables." *Education Finance and Policy* 4(4): 537-571.

Rockoff, Jonah, 2004. "The Impact of Individual Teachers on Student Achievement: New Estimates from Panel Data." *American Economic Review* 94(2): 247-252.

Jacob, Brian and Lars Lefgren, 2008. "Can Principals Identify Effective Teachers? Evidence on Subjective Performance Evaluation in Education." *Journal of Labor Economics* 26(1).

5 Current Issues in K-12 Education Reforms

5.1 Accountability

Cullen, Julie Berry and Randall Reback. 2006. "Tinkering Toward Accolades: School Gaming under a Performance Accountability System." NBER Working Paper #12286.

Figlio, David and Maurice E. Lucas. 2004. "What's in a Grade? School Report Cards and the Housing Market." *American Economic Review*, 94: 591-604.

Hanushek, Eric A and Margaret E. Raymond. 2005. "Does School Accountability Lead to Improved Student Performance?" *Journal of Policy Analysis and Management*, 24: 297-327.

Jacob, Brian A. 2005. "Accountability, Incentives, and Behavior: The Impact of High Stakes Testing in the Chicago Public Schools." *Journal of Public Economics*, 89: 761-796.

Jacob, Brian A. and Steven D. Levitt. 2003. "Rotten Apples: An Investigation of the Prevalence and Predictors of Teacher Cheating." *Quarterly Journal of Economics*, 118(3):843-877.

Rouse, Ceilia Elana, Jane Hannaway, Dan Goldhaber and David Figlio. 2007. "Feeling the Florida Heat? How Low-Performing Schools Respond to Voucher and Accountability Pressure." NBER Working Paper No. 13681.

5.2 School Choice and Competition

Angrist, J., Abdulkadiroglu, A., Dynarski, S., Kane, T., and P. Pathak, "Accountability and Flexibility in Public Schools: Evidence from Boston's Charters and Pilots." *The Quarterly Journal of Economics*, August 2011.

Angrist, Joshua, Eric Bettinger, Erik Bloom, Elizabeth Kling, and Michael Kremer. 2002. "Vouchers for Private Schooling in Colombia: Evidence from a Randomized Natural Experiment." *American Economic Review*, 92(5): 1535-1558.

Chakrabarti, Rajashri. 2008. "Can Increasing Private School Participation and Monetary Loss in a Voucher Program Affect Public School Performance?" *Journal of Public Economics*, 92(5/6): 1371-1393.

Cullen, Julie Berry, Brian Jacob, and Steven Levitt. 2006. "The Effect of School Choice on Participants: Evidence from Randomized Lotteries." *Econometrica*, 74(5): 1191-1230.

Dobbie, Will and Roland G. Fryer Jr., 2011. "Are High-Quality Schools Enough to Increase Achievement Among the Poor? Evidence from the Harlem Children's Zone." *American Economic Journal: Applied Economics*.

Hanushek, Eric A., John F. Kain, Steven G. Rivkin, and Gregory F. Branch. 2007. "Charter School Quality and Parental Decision Making With School Choice," *Journal of Public Economics*, 91(5/6), 823-848.

Hoxby, Caroline and Sonali Murarka. 2009. "Charter Schools in New York City: Who Enrolls and How They Affect Their Students' Achievement." NBER Working Paper No. 14852.

Imberman, Scott A. 2011. "Achievement and Behavior in Charter Schools: Drawing a More Complete Picture," *Review of Economics and Statistics*, 93(2): 416-435.

Imberman, Scott A. 2011. "The Effect of Charter Schools on Achievement and Behavior of Public School Students." *Journal of Public Economics*, 95(7/8): 850-863.

Rouse, Cecilia Elana. 1998. "Private School Vouchers and Student Achievement: An Evaluation of the Milwaukee Parental Choice Program." *Quarterly Journal of Economics*, 113(2): 553-602.

5.3 Teacher Incentive Pay

Muralidharan and Sundararaman . 2011. "Teacher Performance Pay: Evidence from India," *Journal of Political Economy* 119(1);, 39 – 77.

Lavy. 2009. "Performance Pay and Teachers' Effort, Productivity and Grading Ethics." *American Economic Review* 99(5): 1979-2021.

Lavy, Victor, 2002. "Evaluating the Effect of Teachers' Group Performance Incentives on Pupil Achievement." *Journal of Political Economy* 110(6): 1286-1317.

Springer, et al. 2011. "Teacher Pay for Performance: Experimental Evidence from the Project on Incentives in Teaching." Report from the National Center on Performance Incentives, Vanderbilt University.
<http://www.performanceincentives.org/research/point/index.aspx>

Barlevy and Neal. 2012."Pay for Percentile." *American Economic Review*, 102 (5).

Fryer. 2011. "Teacher Incentives and Student Achievement: Evidence from New York City Public Schools." NBER Working Paper No. 16850. (and *Journal of Labor Economics*, forthcoming)

Ahn and Vigdor. 2011. "How Salient are Performance Incentives in Education? Evidence from North Carolina." <http://sites.google.com/site/tomsyahn/>

Ahn. 2011. "The Missing Link: Estimating the Impact of Incentives on Effort and Effort on Production Using Teacher Accountability Legislation." <http://sites.google.com/site/tomsyahn/>

Imberman and Lovenheim. 2012. "Incentive Strength and Teacher Productivity: Evidence from a Group Incentive Program." <https://www.msu.edu/~imberman/Group%20Incentives%20-%207-16-12.pdf>

6 Current Issues in Higher Education

6.1 Financial Aid

Bettinger, Eric, Bridget Terry Long, Philip Oreopoulos and Lisa Sanbonmatsu (2009). "The Role of Simplification and Information in College Decisions: Results from the H&R Block FAFSA Experiment." NBER Working Paper 15361.

Dynarski, Susan. 2002. "The Behavioral and Distributional Implications of Aid for College." *American Economic Review* 92(2): 279-285.

Dynarski, Susan. 2003. "Does Aid Matter? Measuring the Effect of Student Aid on College Attendance and Completion." *American Economic Review*, 93(1): 279-288.

Feldstein, Martin. 1995. "College Scholarship Rules and Private Saving." *American Economic Review*, 85: 552-566.

Long, Bridget Terry. 2004. "Does the Format of a Financial Aid Program Matter? The Effect of State In-Kind Tuition Subsidies" *Review of Economics and Statistics*, 86(3): 767-782.

Mustard, David B., Christopher Cornwell, and Deepa J. Sridhar. 2006. "The Enrollment Effects of Merit-Based Financial Aid: Evidence from Georgia's HOPE Program." *Journal of Labor Economics*, 24(4): 761- 786.

6.2 Credit Constraints

Carneiro, P. and J. Heckman (2002) "The Evidence on Credit Constraints in Post-Secondary Schooling." *The Economic Journal* 112(482): 705-734.

Lovenheim, M. (2011) "The Effect of Liquid Housing Wealth on College Enrollment." *Journal of Labor Economics* October.

Stinebrickner, R. and T. Stinebrickner (2008). "The Effect of Credit Constraints on the College Drop-Out Decision: A Direct Approach Using a New Panel Study." *American Economic Review* 98(5): 2163-2184.

Additional readings will be added if time allows.