

# G6451 The Economics of Labor I

## Introduction to the Course

### General Information

- Professor: Miikka Rokkanen (mr3454@columbia.edu)
- Office hours: Wednesdays at 11.00am-12.00pm
- Office: 1103B International Affairs Building
- Class meets on Wednesdays at 9.00am-10.50am at 1027 International Affairs Building

### Course Description

The purpose of this course is to introduce students to the field of labor economics, and to help students begin their independent research program. We will cover basic theories and some structural work, but our emphasis will be on reduced form empirical work (highlighting the wide variety of quasi-experimental research designs used in this literature). In each class I will give an overview of the topic and/or go through important/interesting papers from the relevant literature. Each student is expected to present a paper of their choice from the reading list during the semester. In addition, each student is expected to start working on an original research paper that can hopefully become a chapter of your thesis. This research project will be continued in the spring in G6452. Your goal should be to have access to data by the beginning of G6452. Finally, you are strongly advised to attend the Applied Micro & Labor Workshop on Wednesdays at 4.15-5.45pm at 1101 International Affairs Building. Here scholars present their latest research, and one has a chance to not only get new ideas, but also see what a research paper looks like at the early stages.

### Grading and Deliverables

Your class grade will be determined by your total points. Points are given as follows:

1. Research idea (10 points): The research idea deliverable does not have to be long (a couple of pages), but it should provide me with enough information to give you some input on your idea.

2. Research proposal (20 points): The research proposal should consist of a clearly defined question; motivation of why the question is economically interesting; a synthesis of relevant background literature focusing on the points most germane to the question at hand; a discussion of the relevant economic theory; an overview of the data to be used to analyze the question.
3. Paper presentation (10 points): The presentation should be relatively short (15-20 min) and discuss the main points of a paper of your choice from the reading list.
4. Class participation (10 points): Class participation includes both physical presence in class as well as asking questions (questions are always welcome!).

### **Class schedule**

Date	Topic	Deadlines
September 3	Labor Market Facts and Trends	
September 10	Empirical Strategies	Presentation Selection
September 17	Labor Supply: Static	
September 24	Labor Supply: Dynamic	
October 1	Labor Demand: Unions, Immigration	
October 8	Labor Demand: Minimum Wage	
October 15	The Roy Model	
October 22	Schooling and Training	
October 29	Externalities and Peer Effects	Research Idea
November 5	School and Teacher Quality	
November 12	School Choice and Competition	
November 19	Intergenerational Mobility	
November 26	Early Childhood Development: Theory	
December 3	Early Childhood Development: Empirics	Research Proposal

## **Reading List**

### **Labor Market Facts and Trends**

- Acemoglu & Autor (2011): “Skills, Tasks and Technologies: Implications for Employment and Earnings,” Handbook of Labor Economics.

- Bailey & Dynarski (2011): "Gains and Gaps: Changing Inequality in U.S. College Entry and Completion", NBER Working Paper 17633.
- Elsby, Hobijn & Sahin (2010): "The Labor Market in the Great Recession," NBER Working Paper 15979.
- Farber (2011): "Job Loss in the Great Recession: Historical Perspective from the Displaced Workers Survey, 1984-2010," NBER Working Paper 17040.
- Goldin (1994): "Labor Markets in the 20th Century," NBER Historical Working Paper 58.
- Goldin (2006): "The Quiet Revolution That Transformed Women's Employment, Education, and Family," *American Economic Review*, 96 (2), 1-21.
- Heckman & Krueger (2004): "Inequality in America: What Role for Human Capital Policies?," Cambridge, MA: MIT Press.
- Katz & Autor (1999): "Changes in the Wage Structure and Earnings Inequality," *Handbook of Labor Economics*.
- Katz & Goldin (2010): "The Race Between Education and Technology," Cambridge, MA: Harvard University Press.
- Kopczuk, Saez & Song (2010): "Earnings Inequality and Mobility in the United States: Evidence From Social Security Data Since 1937," *Quarterly Journal of Economics*, 125 (1), 91-128.
- Moretti (2013): "Real Wage Inequality," *American Economic Journal: Applied Economics*, 5 (1), 65-103.
- Saez & Piketty (2003): "Income Inequality in the United States: 1913-1998," *Quarterly Journal of Economics*, 118 (1), 1-41.

### **Empirical Strategies**

- Angrist & Krueger (1999): "Empirical Strategies in Labor Economics," *Handbook of Labor Economics*.
- Angrist & Pischke (2009): "Mostly Harmless Econometrics," Princeton, NJ: Princeton University Press.

- Blundell & Costa Dias (2009): “Alternative Approaches to Evaluation in Empirical Microeconomics,” *Journal of Human Resources*, 44 (3), 565-640.
- Charness & Kuhn (2011): “Lab Labor: What Can Labor Economists Learn from the Lab?” *Handbook of Labor Economics*.
- DiNardo & Lee (2011): “Program Evaluation and Research Designs,” *Handbook of Labor Economics*.
- Heckman & Vytlacil (2007): “Econometric Evaluation of Social Programs, Part I: Causal Models, Structural Models and Econometric Policy Evaluation,” *Handbook of Econometrics*.
- Heckman & Vytlacil (2007): “Econometric Evaluation of Social Programs, Part II: Using the Marginal Treatment Effect to Organize Alternative Econometric Estimators to Evaluate Social Programs, and to Forecast their Effects in New Environments,” *Handbook of Econometrics*.
- Heckman & Vytlacil (2007): “Econometric Evaluation of Social Programs, Part III: Distributional Treatment Effects, Dynamic Treatment Effects, Dynamic Discrete Choice, and General Equilibrium Policy Evaluation,” *Handbook of Econometrics*.
- Imbens & Wooldridge (2009): "Recent Developments in the Econometrics of Program Evaluation," *Journal of Economic Literature*, 47 (1), 5-86.
- Keane, Todd & Wolpin (2011): “The Structural Estimation of Behavioral Models: Discrete Choice Dynamic Programming Methods and Applications,” *Handbook of Labor Economics*.
- List & Rasul (2011): “Field Experiments in Labor Economics,” *Handbook of Labor Economics*.
- Meghir & Rivkin (2011): “Econometric Methods for Research in Education,” *Handbook of the Economics of Education*.

## **Labor Supply**

### Static Model:

- Bitler, Gelbach & Hoynes (2006): “What Mean Impacts Miss: Distributional Effects of Welfare Reform Experiments,” *American Economic Review*, 96 (4), 988-1012.
- Blank (2002): “Evaluating Welfare Reform in the United States,” *Journal of Economic Literature*, 40 (4), 1105-1166.

- Blundell & MaCurdy (1999): “Labor Supply: A Review of Alternative Approaches,” Handbook of Labor Economics.
- Blundell, Duncan & Meghir (1998): “Estimating Labor Supply Responses Using Tax Reforms,” *Econometrica*, 66 (4), 827-861.
- Cesarini, Lindqvist, Notowidigdo & Ostling (2013): “The Effect of Wealth on Household Labor Supply: Evidence from Swedish Lotteries,” Unpublished Manuscript.
- Chetty, Friedman & Saez (2013): “Using Differences in Knowledge Across Neighborhoods to Uncover the Impacts of the EITC on Earnings,” *American Economic Review*, 103 (7), 2683-2721.
- Eissa & Leibman (1996): “Labor Supply Response to the Earned Income Tax Credit,” *Quarterly Journal of Economics*, 111 (2), 605-637.
- Imbens, Rubin & Sacerdote (2001): “Estimating the Effect of Unearned Income on Labor Supply: Evidence from a Survey of Lottery Players,” *American Economic Review* 91 (4), 778-794.
- Killingsworth & Heckman (1987): “Female Labor Supply: A Survey,” Handbook of Labor Economics.
- Kline & Tartari (2014): “Bounding the Labor Supply Responses to a Randomized Welfare Experiment: A Revealed Preference Approach,” Unpublished Manuscript.
- Kleven & Waseem (forthcoming): “Using Notches to Uncover Optimization Frictions and Structural Elasticities: Theory and Evidence from Pakistan,” *Quarterly Journal of Economics*.
- Moffitt (2002): “Welfare Programs and Labor Supply,” Handbook of Public Economics.
- Pencavel (1987): “Labor Supply of Men,” Handbook of Labor Economics.
- Saez (2010): “Do Taxpayers Bunch at Kink Points?” *American Economic Journal: Economic Policy*, 2 (3), 180-212.

#### The Life-Cycle Model:

- Altonji (1986): “Intertemporal Substitution in Labor Supply: Evidence from Micro Data,” *Journal of Political Economy*, 94 (3), S176-S215.

- Blundell, MaCurdy & Meghir (2007): “Labor Supply Models: Unobserved Heterogeneity, Nonparticipation and Dynamics,” Handbook of Econometrics.
- Camerer, Babcock, Lowenstein & Thaler (1997): “Labor Supply of New York City Cabdrivers: One Day at a Time,” Quarterly Journal of Economics, 112 (2), 407-441.
- Card (1994): “Intertemporal Labor Supply: An Assessment,” Advances in Econometrics Sixth World Congress.
- Card & Hyslop (2005): “Estimating the Effects of a Time-Limited Earnings Subsidy For Welfare-Leavers,” Econometrica 73 (6), 1723-1770.
- Farber (2005): “Is Tomorrow Another Day? The Labor Supply of New York City Cab Drivers,” Journal of Political Economy, 113 (1), 46-82.
- Farber (2008): “Reference-Dependent Preferences and Labor Supply: The Case of New York City Taxi Drivers,” American Economic Review, 98 (3), 1069-1082.
- Fehr & Goette (2007): “Do Workers Work More if Wages Are High? Evidence from a Randomized Field Experiment,” American Economic Review 97 (1), 298-317.
- Ham & Reilly (2002): “Testing Intertemporal Substitution, Implicit Contrast and Hours Restriction Models of Labor Market Using Micro Data,” American Economic Review, 92 (4), 905-927.
- Heckman & Macurdy (1980): “A Life Cycle Model of Female Labour Supply,” Review of Economic Studies, 47 (1), 47-74.
- Eckstein & Wolpin (1989): “Dynamic Labour Force Participation of Married Women and Endogenous Work Experience,” Review of Economic Studies, 56 (3), 375-390.
- MaCurdy (1981): “An Empirical Model of Labor Supply in a Life-Cycle Setting,” Journal of Political Economy, 89 (6), 1059-1085.
- Oettinger (1999): “An Empirical Analysis of the Daily Labor Supply of Stadium Vendors,” Journal of Political Economy, 107 (2), 360-392.

Micro versus Macro Elasticities:

- Chetty (2012): “Bounds on Elasticities With Optimization Frictions: A Synthesis of Micro and Macro Evidence on Labor Supply,” *Econometrica*, 80 (3), 969-1018.
- Chetty, Friedman, Olsen & Pistaferri (2011): “Adjustment Costs, Firm Responses, and Micro vs. Macro Labor Supply Elasticities: Evidence From Danish Tax Records,” *Quarterly Journal Of Economics*, 126 (2), 749-804.
- Chetty, Guren, Manoli & Weber (2011): “Are Micro and Macro Labor Supply Elasticities Consistent? A Review of Evidence on the Intensive and Extensive Margins,” *American Economic Review*, 101 (3), 471-475.

## **Labor Demand**

Foundations:

- Acemoglu & Autor (2011): “Skills, Tasks and Technologies: Implications for Employment and Earnings,” *Handbook of Labor Economics*.
- Angrist (1996): “Short-Run Demand for Palestinian Labor,” *Journal of Labor Economics*, 14 (3), 425-453.
- Autor, Katz & Kearney (2008): “Trends in U.S. Wage Inequality: Revising the Revisionists,” *Review of Economics and Statistics*, 90 (2), 300-323.
- Cahuc & Zyllerberg (2004): “Labor Economics,” Cambridge, MA: MIT Press.
- Card and Lemieux (2001): “Can Falling Supply Explain the Rising Returns to College for Young Men? A Cohort-Based Analysis,” *Quarterly Journal of Economic*, 116 (2), 705-746.
- Carneiro & Lee (2011): “Trends in Quality-Adjusted Skill Premia in the United States, 1960-2000,” *American Economic Review*, 101 (6), 2309-2349.
- Hamermesh (1993): “Labor Demand,” Princeton, NJ: Princeton University Press.
- Hamermesh (1986): “The Demand for Labor in the Long Run,” *Handbook of Labor Economics*.
- Katz & Murphy (1992): “Changes in Relative Wages, 1963-1987: Supply and Demand Factors,” *Quarterly Journal of Economics*, 107 (1), 35-78.
- Nickell (1986): “Dynamic Models of Labour Demand,” *Handbook of Labor Economics*.

#### Unions:

- Card (1996): “The Effect of Unions on the Structure of Wages: A Longitudinal Analysis,” *Econometrica* 64 (6), 957-979.
- DiNardo & Lee (2004): “Economic Impacts of New Unionization on US Private Sector Employers: 1984-2001,” *Quarterly Journal of Economics*, 119 (4), 1383-1442.
- Frandsen (2011): “Union Wage Setting and the Distribution of Employee Earnings: Evidence from Certification Elections,” Unpublished Manuscript.
- Holmes (1998): “The Effects of State Policies on the Location of Industry: Evidence from State Borders,” *Journal of Political Economy*, 106 (4), 667-705.
- Lee & Mas (2012): “Long-Run Impacts of Unions on Firms: New Evidence from Financial Markets, 1961-99,” *Quarterly Journal of Economics*, 127 (1), 333-378.
- Lemieux (1998): “Estimating the Effect of Unions on Wage Inequality in a Model with Comparative Advantage and Non-Random Selection,” *Journal of Labor Economics*, 16 (2), 261-291.
- Mas (2006): “Pay, Reference Points, and Police Performance,” *Quarterly Journal of Economics*, 71 (3), 783-821.

#### Immigration:

- Borjas (1995) “The Economic Benefits from Immigration,” *Journal of Economic Perspectives*, 9 (2), 3-22.
- Borjas (2003): “The Labor Demand Curve Is Downward Sloping: Reexamining the Impact of Immigration on the Labor Market,” *Quarterly Journal of Economics*, 118 (4), 1335-1374.
- Card (1990): “The Impact of the Mariel Boatlift on the Miami Labor Market,” *Industrial and Labor Relations Review*, 43 (2), 245-257.
- Card (2005): “Is the New Immigration Really So Bad?” *Economic Journal*, 115 (507), F300-F323.
- Card (2009): “Immigration and Inequality,” *American Economic Review*, 99 (2), 1-21.
- Friedberg (2001): “The Impact of Mass Migration on the Israeli Labor Market,” *Quarterly Journal of Economics*, 116 (4), 1373-1408.



- Ottaviano & Peri (2012): “Rethinking the Effects of Immigration on Wages,” *Journal of the European Economic Association*, 10 (1), 152-197.

#### Minimum Wage:

- Brown (1999): “Minimum Wages, Employment, and the Distribution of Income,” *Handbook of Labor Economics*.
- Card (1992): “Using Regional Variation to Measure the Effect of the Federal Minimum Wage,” *Industrial and Labor Relations Review*, X (X), X-X.
- Card & Krueger (1994): “Minimum Wages and Employment: A Case Study of the Fast Food Industry in New Jersey,” *American Economic Review*, 84 (4), 772-93.
- Card & Krueger (1995): “Myth and Measurement: The New Economics of the Minimum Wage,” Princeton University Press.
- Dube, Lester & Reich. (2010): “Minimum Wage Effects across State Borders: Estimates Using Contiguous Counties,” *Review of Economics and Statistics*, 92 (4), 945-964.
- Kennan (1995): "The Elusive Effects of Minimum Wages," *Journal of Economic Literature* , 33 (4), 1949-1965.
- Manning (2003): “Monopsony in Motion: Imperfect Competition in Labor Markets,” Princeton, NJ: Princeton University Press.
- Manning (2011): “Imperfect Competition in the Labor Market,” *Handbook of Labor Economics*.
- Neumark, Salas & Wascher (2013): “Revisiting the Minimum Wage and Employment Debate: Throwing out the Baby with the Bathwater?” NBER Working Paper 18681.
- Neumark & Wascher (2010): “Minimum Wages,” Cambridge, MA: MIT Press.

#### **The Roy Model**

##### Foundations:

- Borjas (1987): "Self-Selection and the Earnings of Immigrants," *American Economic Review*, 77 (4), 531-553.

- Borjas (1999): "The Economic Analysis of Immigration," Handbook of Labor Economics.
- French & Taber (2011): "Identification of Models of the Labor Market," Handbook of Labor Economics.
- Heckman & Honore (1990): "The Empirical Content of the Roy Model," *Econometrica*, 58 (5), 1121-1149.
- Neal & Rosen (2000): "Theories of the Distribution of Earnings," Handbook of Income Distribution.
- Roy (1951): "Some Thoughts on the Distribution of Earnings," *Oxford Economic Papers*, 3 (2), 135-146.

Applications:

- Abramitzky (2009): "The Effect of Redistribution on Migration: Evidence from the Israeli Kibbutz," *Journal of Public Economics*, 93 (3-4), 498-511.
- Abramitzky, Boustan & Eriksson (2012): "Europe's Tired, Poor, Huddled Masses: Self-Selection and Economic Outcomes in the Age of Mass Migration," *American Economic Review*, 102 (5), 1832-1856.
- Dahl (2002): "Mobility and the Return to Education: Testing a Roy Model with Multiple Markets," *Econometrica* 70 (6), 2367-2420.
- Bacolod (2007): "Do Alternative Opportunities Matter? The Role of Female Labor Markets In The Decline Of Teacher Quality," *Review of Economics and Statistics*, 89 (4), 737-751.
- Chandra & Staiger (2007): "Productivity Spillovers in Health Care: Evidence from the Treatment of Heart Attacks," *Journal of Political Economy*, 115 (1), 103-140.
- Chiquiar & Hanson (2005): "International Migration, Self-Selection, and the Distribution of Wages: Evidence from Mexico and the United States," *Journal of Political Economy*, 113 (2), 239-281.
- Mulligan & Rubinstein (2008): "Selection, Investment, and Women's Relative Wages Over Time," *Quarterly Journal of Economics*, 123 (3), 1061-1110.
- Willis & Rosen (1979): "Education and Self-Selection," *Journal of Political Economy*, 87 (5), 7-36.

## Schooling and Training

### Foundations:

- Becker (1993): "Human Capital. University of Chicago Press.
- Ben-Porath (1967): "The Production of Human Capital and the Lifecycle of Earnings," *Journal of Political Economy*, 75 (4), 352-365.
- Heckman, Lochner & Todd (2006): "Earnings Functions, Rates of Return and Treatment Effects: The Mincer Equation and Beyond," *Handbook of the Economics of Education*.
- Lemieux (2006): "The Mincer Equation Thirty Years after Schooling, Experience, and Earnings," in S. Grossbard-Shechtman (ed.) *Jacob Mincer, A Pioneer of Modern Labor Economics*, Springer Verlag.
- Mincer (1974): "Schooling, Experience, and Earnings," Columbia University Press.

### Returns to Schooling:

- Angrist & Krueger (1991): "Does Compulsory School Attendance Affect Schooling and Earnings?" *Quarterly Journal of Economics*, 106 (4), 979-1015.
- Ashenfelter & Rouse (1998): "Income, Schooling, and Ability: Evidence from a New Sample of Identical Twins," *Quarterly Journal of Economics*, 113 (1), 253-284.
- Belzil & Hansen (2002): "Unobserved Ability and the Return to Schooling," *Econometrica*, 70 (5), 2075-2091.
- Card (1999): "The Causal Effect of Education on Earnings," *Handbook of Labor Economics*.
- Card (2001): "Estimating the Return to Schooling: Progress on Some Persistent Econometric Problems," *Econometrica*, 69(5):1127-1160.
- Duflo (2001): "Schooling and Labor Market Consequences of School Construction in Indonesia: Evidence from an Unusual Policy Experiment," *American Economic Review*, 91 (4), 795-813.
- Kane & Rouse (1995): "Labor-Market Returns to Two- and Four-Year College," *American Economic Review*, 85 (3), 600-614.

- Lang (1993): “Ability Bias, Discount Rate Bias and the Return to Education,” Unpublished Manuscript.
- Lochner (2011): “Nonproduction Benefits of Education: Crime, Health, and Good Citizenship,” Handbook of the Economics of Education.
- Oreopoulos (2006): “Estimating Average and Local Average Treatment Effects of Education When Compulsory Schooling Laws Really Matter”, American Economic Review 96 (1), 152-175.
- Oreopoulos & Salvanes (2011): "Priceless: The Nonpecuniary Benefits of Schooling," Journal of Economic Perspectives, 25 (1), 159-184.

#### Schooling Decisions:

- Abramitzky & Lavy (forthcoming): “How Responsive is Investment in Schooling to Changes in Redistributive Policies and in Returns?,” *Econometrica*.
- Attanasio, Meghir & Santiago (2012): “Education Choices in Mexico: Using a Structural Model and a Randomized Experiment to Evaluate PROGRESA,” *Review of Economic Studies*, 79 (1), 37-66.
- Bettinger, Long, Oreopoulos & Sabonmatsu (2012): “The Role of Application Assistance and Information in College Decisions: Results from the H&R Block FAFSA Experiment,” *Quarterly Journal of Economics*, 127 (3), 1205-1242.
- Bursztyjn & Coffman (2012): “The Schooling Decision: Family Preferences, Intergenerational Conflict, and Moral Hazard in the Brazilian Favelas,” *Journal of Political Economy*, 120 (3), 359-397.
- Cornwall, Mustard & Sridhar (2006): “The Enrollment Effects of Merit-Based Financial Aid: Evidence from Georgia’s HOPE Program,” *Journal of Labor Economics*, 24 (4), 761-786.
- Dynarski (2003): “Does Aid Matter? Measuring the Effect of Student Aid on College Attendance and Completion,” *American Economic Review*, 93 (1), 279-288.
- Eckstein & Wolpin (1999): “Why Youths Drop Out of High School: The Impact of Preferences, Opportunities, and Abilities,” *Econometrica*, 67 (6), 1295-1340.

- Jayachandran & Lleras-Muney (2009): “Life Expectancy and Human Capital Investments: Evidence from Maternal Mortality Declines,” *Quarterly Journal of Economics*, 124 (1), 349-397.
- Jensen (2010): “The Perceived Returns to Education and the Demand for Schooling,” *Quarterly Journal of Economics*, 125 (2), 515-548.
- Keane & Woplin (1997): “The Career Decisions of Young Men,” *Journal of Political Economy*, 105 (3), 473-522.
- Todd & Wolpin (2006): “Assessing the Impact of a School Subsidy Program in Mexico: Using a Social Experiment to Validate a Dynamic Behavioral Model of Child Schooling and Fertility,” *American Economic Review*, 96 (5), 1384-1417.

#### Training Programs:

- Abadie, Angrist & Imbens (2002): “Instrumental Variables Estimates of the Effect of Subsidized Training on the Quantiles of Trainee Earnings,” 70 (1), 91-117.
- Ashenfelter (1978): “Estimating the Effect of Training Programs on Earnings,” *The Review of Economics and Statistics*, 60 (1), 47-57.
- Ashenfelter & Card (1985): "Using the Longitudinal Structure of Earnings to Estimate the Effect of Training Programs on Earnings," *Review of Economics and Statistics*, 67 (4), 648-666.
- Card, Kluve & Weber (2010): “Active Labour Market Policy Evaluations: A Meta-Analysis,” *Economic Journal*, 120 (548), F452-F477.
- Dehejia & Wahba (1999): “Causal Effects in Nonexperimental Studies: Re-evaluating the Evaluation of Training Programs,” *Journal of the American Statistical Association*, 94 (448), 1053-1062.
- Heckman & Hotz (1989): “Choosing Among Alternative Non-experimental Methods for Estimating the Impact of Social programs: The Case of Manpower Training,” *Journal of the American Statistical Association*, 84 (408), 862-874.
- Heckman, Ichimura & Todd (1997): “Matching as an Econometric Evaluation Estimator: Evidence from Evaluating a Job Training Programme,” *Review of Economic Studies*, 64 (4), 605-654.

- Heckman, Lalonde & Smith (1999): “The Economics and Econometrics of Active Labor Market Programs,” Handbook of Labor Economics.
- Lalonde (1986): "Evaluating the Econometric Evaluations of Training Programs with Experimental Data," American Economic Review, 76 (4), 604-620.
- Lalonde (1995): “The Promise of Public Sector Training Programs,” Journal of Economic Perspectives, 9 (2), 149-168.
- Orr, Bloom, Bell, Doolittle, Lin & Cave (1996): “Does Training for the Disadvantaged Work? Evidence from the National JTPA Study,” Washington, DC: The Urban Institute.
- Smith & Todd (2005): “Does Matching Overcome Lalonde’s Critique of Nonexperimental Estimators?” Journal of Econometrics, 125 (1-2), 305-353.

## **Externalities and Peer Effects**

Foundations:

- Acemoglu (1996): “A Microfoundation for Social Increasing Returns in Human Capital Accumulation,” Quarterly Journal of Economics, 111 (3), 779-804.
- Arnott & Rowse (1987): “Peer Group Effects and Educational Attainment,” Journal of Public Economics, 32 (3), 287-305.
- Angrist (forthcoming): “Perils of Peer Effects,” Labour Economics.
- Bhattacharya (2009): “Inferring Optimal Peer Assignment From Experimental Data,” Journal of the American Statistical Association, 104 (486), 486-500.
- Benabou (1993): “Workings of a City: Location, Education and Production.” Quarterly Journal of Economics, Vol. 108(3), 619-652.
- Graham (2011): “Econometric Methods for the Analysis of Assignment Problems in the Presence of Complementarity and Social Spillovers,” Handbook of Social Economics.
- Hoxby (1996): “Are Efficiency and Equity in School Finance Substitutes or Complements?” Journal of Economic Perspectives, 10 (4), 51-72.

- Epple & Romano (2011): “Peer Effects in Education: A Survey of the Theory and Evidence,” *Handbook of Social Economics*.
- Lazear (2001): “Education Production,” *Quarterly Journal of Economics*, 116 (3), 777–803.
- Manski (1993): “Identification of Endogenous Social Effects: The Reflection Problem,” *Review of Economic Studies*, 60 (3), 531-542.
- Manski (2000): “Economic Analysis of Social Interactions,” *Journal of Economic Perspectives*, 14 (3), 115-136.
- Sacerdote (2011): “Peer Effects in Education: How Might They Work, How Big Are They and How Much Do We Know Thus Far?,” *Handbook of the Economics of Education*.

Evidence:

- Acemoglu & Angrist (2000): “How Large Are The External Returns to Education: Evidence from Compulsory Schooling Laws,” *NBER Macroeconomics Annual* 2000.
- Angrist & Lang (2004): “Does School Integration Generate Peer Effects? Evidence from Boston’s Metco Program,” *American Economic Review*, 94 (5), 1613-1634.
- Bandiera, Barankay & Rasul (2010): “Social Incentives in the Workplace,” *Review of Economic Studies*, 77 (2), 417-458.
- Carrell, Sacerdote & West (2013): “From Natural Variation to Optimal Policy? The Importance of Endogenous Peer Group Formation,” *Econometrica* 81, (3), 855-882.
- Dahl, Loken & Mogstad (2014): "Peer Effects in Program Participation," *American Economic Review*, 104 (7), 2049-2074.
- Duflo, Dupas & Kremer (2011): "Peer Effects, Teacher Incentives, and the Impact of Tracking: Evidence from a Randomized Evaluation in Kenya," *American Economic Review*, 101 (5), 1739-1774.
- Falk & Ichino (2006): “Clean Evidence on Peer Effects,” *Journal of Labor Economics*, 24 (1), 39-58.

- Guryan, Kroft & Notowidigdo (2009): “Peer Effects in the Workplace: Evidence from Random Groupings in Professional Golf Tournaments,” *American Economic Journal: Applied Economics*, 1 (4), 34-68.
- Imberman, Kugler & Sacerdote (2012): “Katrina’s Children: Evidence on the Structure of Peer Effects from Hurricane Evacuees,” *American Economic Review*, 102 (5), 2048-2082.
- Mas & Moretti (2009): “Peers at Work,” *American Economic Review*, 99 (1), 112-145.
- Moretti (2004): “Estimating the Social Return to Higher Education: Evidence from Longitudinal and Repeated Cross-Sectional Data,” *Journal of Econometrics*, 121 (1-2), 175-212.
- Rauch (1993): “Productivity Gains from Geographic Concentration of Human Capital: Evidence from the Cities,” *Journal of Urban Economics*, 34 (3), 380-400.
- Sacerdote (2001): “Peer Effects with Random Assignment: Results for Dartmouth Roommates,” *Quarterly Journal of Economics* (2001), 116 (2), 681-704.
- Waldinger (2012): “Peer Effects in Science: Evidence from the Dismissal of Scientists in Nazi Germany,” *The Review of Economic Studies*, 79 (2), 838-861.

## **School and Teacher Quality**

### School Resources:

- Altonji & Dunn (1996): “Using Siblings to Estimate the Effect of School Quality on Wages,” *Review of Economics and Statistics*, 78 (4), 665-671.
- Angrist & Lavy (1999): “Using Maimonides’ Rule to Estimate the Effect of Class Size on Scholastic Achievement,” *Quarterly Journal of Economics*, 114 (2), 533-575.
- Card & Krueger (1992): “Does School Quality Matter? Returns to Education and Characteristics of Public Schools in the United States,” *Journal of Political Economy*, 100 (1), 1-40.
- Card & Krueger (1996): “School Resources and Student Outcomes: An Overview of the Literature and New Evidence from North and South Carolina,” *Journal of Economic Perspectives*, 10 (4), 31-50.



- Card & Whitmore (2001): “The Effect of Attending a Small Class in the Early Grades on College-Test Taking and Middle School Test Results: Evidence from Project STAR,” *Economic Journal*, 111 (468), 1-28.
- Chetty, Friedman, Hilger, Saez, Schanzenbach & Yagan (2011): “How Does Your Kindergarten Classroom Affect Your Earnings? Evidence from Project STAR,” *Quarterly Journal of Economics*, 126 (4), 1593-1660.
- Fredriksson, Ockert & Oosterbeek (2013): “Long-Term Effects of Class Size,” *Quarterly Journal of Economics*, 128 (1), 249-285.
- Krueger (1999): “Experimental Estimates of Education Production Functions,” *Quarterly Journal of Economics*, 114 (2), 497-532.
- Hanushek (2006): “School Resources,” *Handbook of the Economics of Education*.
- Urquiola & Verhoogen (2009): “Class-Size Caps, Sorting, and the Regression-Discontinuity Design,” *American Economic Review*, 99 (1), 179-215.

Teachers:

- Carrell & West (2010): “Does Professor Quality Matter? Evidence from Random Assignment of Students to Professors,” *Journal of Political Economy*, 118 (3), 409-432.
- Chetty, Friedman & Rockoff (forthcoming): “Measuring the Impacts of Teachers I: Evaluating Bias in Teacher Value-Added Estimates,” *American Economic Review*.
- Chetty, Friedman & Rockoff (forthcoming): “Measuring the Impact of Teachers II: Teacher Value-Added and Student Outcomes in Adulthood,” *American Economic Review*.
- Hanushek & Rivkin (2006): “Teacher Quality,” *Handbook of the Economics of Education*.
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