

Labor Economics I

MIT (14.661/14.661A)
Fall 2022

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J. Angrist

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This course covers traditional and contemporary topics in labor economics and aims to encourage the development of independent research interests. Prerequisites are intermediate microeconomics (including basic duality) and familiarity with econometrics at the level of *Mostly Harmless Econometrics*.

The class is offered in two versions, 14.661 and 14.661A, meeting concurrently.

Class requirements

All 661 participants are expected to:

- Attend classes and recitation each week
- Take an out-of-class final during exam week
- Complete 4 problem sets
- Come to class prepared to discuss assigned readings

In addition, 661A participants are expected to:

- Deliver a brief in-class presentation (BIP)
- Complete an empirical project involving replication and extension of published work

Extra work for 661A is detailed in a separate note posted on Canvas. Economics Ph.D. students wishing to satisfy requirements for Labor as a major field should take 661A. Minor field requirements can be met by passing 661.

Grading

Labor students may earn a total of 100 regular points plus 8 participation points as follows:

- 14.661 – 4 problem sets (10 points each); final (60 points); attendance (8=24/3 points).
- 14.661A – 4 problem sets (10 points each); final (35 points); empirical project (25 points); attendance (8 points). BIPs are ungraded but required for Labor as a major field.

[Canvas](#) has our readings, assignments, and recitation material.

READINGS (Angrist)

Books (mostly for review) are on reserve. An (M) flags studies done as part of an MIT Ph.D. thesis.

Books J. Angrist and S. Pischke, *Mostly Harmless Econometrics: An Empiricist's Companion*, Princeton University Press, 2009 (MHE; a graduate reference on empirical methods).

J. Angrist and S. Pischke, *Mastering 'Metrics*, Princeton University Press, 2014 (MM; 'metrics review and many relevant applications).

G. Borjas, *Labor Economics* 8e, McGraw-Hill, 2020.

I. Labor Market Facts and Trends

Metrics: Sections 3-4 in Angrist and Krueger, “Empirical Strategies in Labor Economics,” Chapter 23 in the *HOLE*, Volume 3A, 1999 (AK99).

C. Goldin, "Labor Markets in the 20th Century," NBER Historical Working Paper No. 8, June 1994 [also in *Cambridge Economic History of the US*, chapter 10, pp. 549-624].

C. Romer, "Spurious Volatility in Historical Unemployment Data," *Journal of Political Economy*, 94 [1], February 1986, 1-37.

J. Rothstein, “Unemployment and Job Search in the Great Recession,” *Brookings Papers on Economic Activity* 43 (Fall 2011), 143-213.

C. Goldin and R. Margo, “The Great Compression: The Wage Structure in the United States at Mid-century,” *Quarterly Journal of Economics*, February 1992.

L. Katz and C. Goldin, *The Race Between Education and Technology*, Harvard U. Press, 2010.

T. Lemieux, “The Changing Nature of U.S. Wage Inequality,” *J. of Population Economics*, 2007.

D. Autor, L. Katz, and M. Kearney, “Trends in U.S. Wage Inequality: Revising the Revisionists,” *The Review of Economics and Statistics*, May 2008. (M)

E. Saez and T. Piketty, “Income Inequality in the United States: 1913-1998,” *Quarterly Journal of Economics*, February 2003 (and web updates on Saez home page).

W. Kopczuk, E. Saez, and J. Song, “Earnings Inequality and Mobility in the United States: Evidence From Social Security Data Since 1937,” *The QJE*, 125(1), February 2010.

C.B. Mulligan and Y. Rubinstein, “Selection, Investment, and Women’s Relative Wages over Time,” *The QJE* 123 (August 2008), 1061-1110.

H. Farber, “Employment, Hours, and Earnings Consequences of Job Loss; US Evidence from the Displaced Workers Survey,” *JOLE* 35 S1 (July 2017).

D. Autor, “Why Are There Still So Many Jobs? The History and Future of Workplace Automation,” *J. Economic Perspectives* 29 (Summer 2015), 3-30.

D. Autor, “Work of the Past, Work of the Future,” *The AER* 109 (May 2019), 1-32.

D. Autor and M. Wasserman, “[Wayward Sons: The Emerging Gender Gap in Labor Markets and Education](#),” *Third Way*, March 2013.

K. Charles, E. Hurst, and M. Schwartz, “The Transformation of Manufacturing and the Decline in US Employment,” *NBER Macro Annual Volume 33* (2019).

B. Meyer and J. Sullivan, “Consumption and Income Inequality in the U.S. Since the 1960s,” *The JPE* (forthcoming), [manuscript, June 2022](#).

II. Labor Supply

A. Basics

A. Deaton and J. Muellbauer, *Economics and Consumer Behavior*, Cambridge University Press, 1980, especially Chapter 4.

M. Killingsworth, *Labor Supply*, Cambridge University Press, 1983; Chapters 1, 2, and 7.

O. Ashenfelter and J. Heckman, "The Estimation of Income and Substitution Effects in a Model of Family Labor Supply," *Econometrica*, 42[1], January 1974, 73-86.

Heckman, James J., "Shadow Prices, Market Wages and Labor Supply," *Econometrica*, 42[4], July 1974, 679-94.

R. Blundell and T. MaCurdy, "Labor Supply: A Review of Alternative Approaches," *The HOLE* Volume 3A, chapter 27, 1999.

G. Imbens, D.B. Rubin, and B. Sacerdote, "Estimating the Effect of Unearned Income on Labor Supply: Evidence from a Survey of Lottery Players," *American Economic Review* 91 (2001).

D. Cesarini, E. Lindqvist, M. Notowidigdo, and R. Östling, "The Effect of Wealth on Individual and Household Labor Supply: Evidence from Swedish Lotteries," *American Economic Review*, 107 (December 2017).

B. Tax and Transfer Programs

R. Moffitt, "Welfare Programs and Labor Supply," *Handbook of Public Economics: Volume 4*. eds. A. Auerbach and M. Feldstein, September 2002.

N. Eissa and J. Leibman, "Labor Supply Response to the Earned Income Tax Credit," *Quarterly Journal of Economics* 111 (May 1996).

B. Meyer and D. Rosenbaum, "Welfare, the Earned Income Tax Credit, and the Labor Supply of Single Mothers" (with Dan T. Rosenbaum), *Quarterly Journal of Economics* CXVI, August 2001, 1063-1114.

Greenberg, D., and H. Halsey, "Systematic Misreporting and Effects of Income Maintenance Experiments on Work Effort: Evidence from the SIME-DIME," *Journal of Labor Economics*, 1[4], October 1983, 380-407.

O. Ashenfelter, "Determining Participation in Income-Tested Social Programs," *Journal of the American Statistical Association*, 78[383], September 1983, 517-525.

O. Ashenfelter and M. Plant, "Non-Parametric Estimates of the Labor Supply Effects of Negative Income Tax Programs," *Journal of Labor Economics*, 8[1] Part 2, 1990, S397-S415.

Plant, M., "An Empirical Analysis of Welfare Dependence," *American Economic Review*, 74[4], September 1984, 673-684.

R. Blank, "Evaluating Welfare Reform in the United States," *Journal of Economic Literature*, December 2002, 1105-66.

D. Card and D. Hyslop, "Estimating the Effects of a Time-Limited Earnings Subsidy For Welfare-Leavers," *Econometrica* 73 (November 2005), 1723-1770.

J. Rothstein, "Is the EITC as Good as an NIT? Conditional Cash Transfers and Tax Incidence." *American Economic Journal: Economic Policy* 2 (1), February 2010, p.p. 177-208.

R. Chetty, J. Friedman, and E. Saez, "Using Differences in Knowledge Across Neighborhoods to Uncover the Impacts of the EITC on Earnings," *The AER* 103 (December 2013), 2683-2721.

B.D. Meyer, C. Murphy, and J.X. Sullivan, "Changes in the Distribution of Economic Well-Being During the COVID-19 Pandemic," NBER Working Paper No. 29878 (March 2022).

C. Household and Family Models

'Metrics: MHE, Chapter 4 and MM Chapter 3 (Instrumental variables).

Becker, Gary S., 1981, *A Treatise on the Family*, Cambridge: Harvard University Press.

Gronau, R., "Leisure, Home Production, and Work -- The Theory of the Allocation of Time Revisited," *Journal of Political Economy*, 85[6], December 1977, 1099-1124.

J. Angrist and W. Evans, "Children and their Parents' Labor Supply: Evidence from Exogenous Variation in Family Size," *AER* 88[3], June 1998, 450-477.

Gelbach, J., "Public Schooling for Young Children and Maternal Labor Supply," *American Economic Review*, 92, March 2002, 307-322. (M)

M. Fitzpatrick, "Revising Our Thinking About the Relationship Between maternal Labor Supply and Preschool," *J. Human Resources* 47 (Summer 2012).

M. Kearney, "Is There an Effect of Incremental Welfare Benefits on Fertility Behavior? A Look at the Family Cap," *Journal of Human Resources* 39(2), 2004. (M)

T. Hofmarcher and E. Plug, "Specialization in Same-sex and Different-Sex Couples," *Labour Economics* 77 (August 2022).

The Pandemic Home Front

C. Amuedo-Dorantes, M. Marcen, and M. Morales, "Schooling and Parental Labor Supply: Evidence from COVID-19 School Closures in the United States," *ILR Review*, May 2022.

B. Hansen, Joseph J. Sabia, and J. Schaller, "Schools, Job Flexibility, and Married Women's Labor Supply," NBER Working Paper No. 29660 (August 2022).

N. Bloom, R. Han, and J. Liang, "How Hybrid Work From Home Works Out," NBER Working Paper No. 30292 (July 2022).

More IV 'Metrics

J. Angrist and I. Fernandez-Val, "Extrapolating: External Validity and Overidentification in the LATE Framework," Chapter 11 in *Advances in Economics and Econometrics (Tenth World Congress)*, 2013.

J. Angrist, V. Lavy, and A. Schlosser, "New Evidence on the Causal Link between the Quantity and Quality of Children," *The Journal of Labor Economics* (October 2010).

P. Kline and C.R. Walters, "Evaluating Public Programs with Close Substitutes: The Case of Head Start," *The QJE* 131 (November 2016), 1795-1848.

D. Aaronson, et al., "The Effect of Fertility on Mothers' Labour Supply Over the Last Two Centuries," *The Economic Journal* 131 (January 2021).

J. Angrist and B. Frandsen, "Machine Labor," *J. Labor Econ.* 40 (April 2022).

D. The Life-Cycle Model

Metrics: MHE, Section 4.1 and MM, Chapter 3 (IV and grouped data);

J. Angrist, "Grouped-Data Estimation and Testing in Simple Labor Supply Models," *Journal of Econometrics*, 47[2], 1991, 243-266.

Lucas, R.E., and L. Rapping, "Real Wages, Employment, and Inflation," *Journal of Political Economy*, 77[5], September-October 1969, 721-764.

G. Becker and G. Ghez, The Allocation of Time and Goods Over the Life-Cycle, Columbia University Press, 1975.

R. Hall, "Stochastic Implications of the Life-Cycle PIH," *The JPE* 86, 1978.

T. MaCurdy, "An Empirical Model of Labor Supply in a Life-Cycle Setting," *Journal of Political Economy*, 89[6], December 1981, 1059-1085.

J. Altonji, "Intertemporal Substitution in Labor Supply: Evidence from Micro Data," *Journal of Political Economy*, 94[3] Part 2, June 1986, S176-S215.

Browning, Deaton and Irish, "A Profitable Approach to Labor Supply and Commodity Demand Over the Life-Cycle," *Econometrica*, 53[3], May 1985, 503-543.

D. Card, "Intertemporal Labor Supply: An Assessment," in C. Sims, ed., Advances in Econometrics Sixth World Congress, vol. II, Cambridge University Press, 1994, 49-78.

R. Blundell, A. Duncan, and C. Meghir, "Estimating Labor Supply Responses Using Tax Reforms," *Econometrica* 66 (1998), 827-861.

P.J. Devereux. "Small Sample Bias in Synthetic Cohort Models of Labor Supply," *The Journal of Applied Econometrics*, June 2007, 839-848.

Target earnings vs the ISH: evidence from cabs and gigs

A. Mas and A. Pallais, "Valuing Alternative Work Arrangements," *The AER*, 2017.

A. Mas and A. Pallais, "Labor Supply and the Value of Non-Work Time: Experimental Estimates from the Field," *American Economic Review: Insights*, 1 (2019).

C. Camerer, L. Babcock, G. Lowenstein, and R. Thaler, "Labor Supply of New York City Cabdrivers: One Day at a Time," *QJE* 112 (1997), 407-441.

Oettinger, Gerald S., "An Empirical Analysis of the Daily Labor Supply of Stadium Vendors," *Journal of Political Economy*, 107[2], April 1999, 360-92.

H. Farber, "Is Tomorrow Another Day? The Labor Supply of New York City Cab Drivers," *The JPE*, February 2005.

E. Fehr and L. Goette, "Do Workers Work More if Wages are High? Evidence from a Randomized Field Experiment," *American Economic Review* 97, March 2007.

H. Farber, "Reference-Dependent Preferences and Labor Supply: The Case of New York City Taxi Drivers," *The American Economic Review* 98 (2008), 1069-1082.

T. Stafford, "What Do Fisherman Tell Us that Taxi Drivers Don't? An Empirical Investigation of Labor Supply," *Journal of Labor Economics*, 33[3], 2015.

J. Angrist, S. Caldwell, and J. Hall, "Uber vs Taxi: A Driver's Eye View," *American Economic Journal: Applied Economics* 13 (July 2021) (M).

S. Caldwell and E. Oehlsen, "Gender Differences in Labor Supply: Experimental Evidence from the Gig Economy," UC Berkeley Economics Department, manuscript, July 2022 (M).

III. Labor Demand and Demand-Side Institutions and Policies

A. Labor Demand

D. Hamermesh, Labor Demand, Princeton, NJ: Princeton University Press, Chapters 2-3, 18-136.

D. Hamermesh, "The Demand for Labor in the Long Run," Chapter 8 in O. Ashenfelter and R. Layard [eds.] Handbook of Labor Economics, Volume 1, 1986.

D. Card, "Unexpected Inflation, Real Wages, and Employment Determination in Union Contracts," *American Economic Review*, September 1990, 669-88.

J. Angrist, "Short-Run Demand for Palestinian Labor," *Journal of Labor Economics*, July 1996.

Katz and Murphy, "Changes in Relative Wages, 1963-87: Supply and Demand Factors," *The QJE* 107 (Feb 1992), 35-78.

D. Card and T. Lemieux, "Can Falling Supply Explain the Rising Return to College for Younger Men? A Cohort-based Analysis," *The QJE* 116 (May 2001), 705-746.

B. Market Structure and the Min

'Metrics: MHE, Chapter 5 and MM, Chapter 5 (Diffs-in-diffs).

C. Brown, "Minimum Wages, Employment, and the Distribution of Income", Chapter 32 in O. Ashenfelter and D. Card [eds.] Handbook of Labor Economics, Volume 3, 1999.

D. Card, "Using Regional Variation to Measure the Effect of the Federal Minimum Wage," *Industrial and Labor Relations Review*, October 1992.

D. Card and A. Krueger (1994), "Minimum Wages and Employment: A Case Study ..." *The AER* 84 (September 1994).

R. Dickens, S. Machin and A. Manning, "The Effects of Minimum Wages on Employment: Theory and Evidence From Britain", *J. Labor Econ.*, 17[1], January 1999, 1-22.

A. Manning, *Monopsony in Motion: Imperfect Competition in Labor Markets*, Princeton University Press, 2003.

Propper, Carol and Van Reenen, John. "Can Pay Regulation Kill? Panel Data Evidence on the Effect of Labor Markets on Hospital Performance," *Journal of Political Economy*, 2010, 118 (2). pp. 222-273.

D. Neumark, J.M. Salas, W. Wascher, "Revisiting the Minimum Wage—Employment Debate: Throwing Out the Baby with the Bathwater?," *ILR Review* 67 (May 2014).

D. Cengiz, A. Dube, A. Lindner, and B. Zipperer, "The Effect of Minimum Wages on Low-Wage Jobs," *The QJE* 134 (August 2019).

P. Harasztosi and A. Lindner, "Why Pays for the Minimum Wage?," *The AER* v. 109 (Aug 2019).

O. Ashenfelter S. Jurajda, "Minimum Wages, Wages, and Price Pass-Through: The case of McDonalds," *J. Labor Econ.* 40 (April 2022).

E. Derenoncourt, C. Noelke, D. Weil, and B. Taska, "Spillover Effects of Voluntary Employer Minimum Wages," NBER Working Paper No. 29425 (Rev. June 2022).

C. Immigration and Migration

Metrics: Abadie (2021) Synthetic Controls survey in the *JEL*.

G.E. Johnson, "The Labor Market Effects of Immigration," *Industrial and Labor Relations Review* 33 (April 1980).

G. Borjas (1995) "The Economic Benefits from Immigration," *JEP* 9 (Spring), 3-22.

J. Altonji and D. Card, "The Effects of Immigration on the Labor Market Outcomes of Less-Skilled Natives," in J. Abowd and R. Freeman, eds., Immigration, Trade, and the Labor Market, University of Chicago Press, 1991, 201-234.

D. Card, "The Impact of the Mariel Boatlift on the Miami Labor Market." *Industrial and Labor Relations Review*, vol.43, (January 1990), pp. 245--257.

Borjas, George J., Richard B. Freeman, and Lawrence F. Katz. "How Much Do Immigrant and Trade Affect Labor Market Outcomes?" *Brookings Papers on Economic Activity*, no. 1 (1997).

Pischke, Jorn-Steffen, and Johannes Velling, "Employment Effects of Immigration to Germany: An Analysis Based on Local Labor Markets," *The Rev. Ec. Stat.* 79 (Nov. 1997).

J. Angrist and A. Kugler, "Protective or Counter-Productive? Labor Market Institutions and the Effect of Immigration on EU Natives," *The Economic Journal*, June 2003.

G. Borjas, "The Labor Demand Curve is Downward Sloping: Reexamining the Impact of Immigration on the Labor Market," *QJE* November 2003.

P. Cortes, "The Effect of Low-Skilled Immigration on US Prices: Evidence from CPI Data," *JPE* 2008, 381-422. (M)

D. Card, "Immigration and Inequality," *AER* 99 (May 2009), 1-21.

C.L. Smith, "The Impact of Low-skilled Immigration on the Youth Labor Market," *Journal of Labor Economics* 30(1), 2012, 55-89. (M)

G. Ottaviano and G. Peri, "Rethinking the Effects of Immigration on Wages," *J. of the Eur. Ec. Assoc.* 10 (2012), 152-197

G. Borjas, "The Wage Impact of the *Marielitos*: A Reappraisal," *Industrial and Labor Relations Review*, 70 (2017).

M. Clemens and J. Hunt, "The Labor Market Effects of Refugee Waves: reconciling Conflicting results," *ILR Review* 72 (2019; see also Borjas' rejoinder in the same issue).

IV. Intro to Human Capital

A. Schooling, Experience, and Earnings

J. Mincer, Schooling, Experience, and Earnings, New York: NBER, 1974.

G. Becker, Human Capital, 3rd Edition, Chicago: University of Chicago press, 1993.

R.J. Willis, "Wage Determinants," Chapter 10 in the *HOLE*, volume 1, 1987.

Ben-Porath, Yoram (1967). "The Production of Human Capital Over the Life Cycle," *Journal of Political Economy*, Vol. 75, No. 4-1, pp. 352-365.

R.J. Willis, and Sherwin Rosen, "Education and Self-Selection," *Journal of Political Economy*, 87[5] Part 2, Oct 1979: S7-S36.

R. Freeman, "Demand for Education," Chapter 6 in *The Handbook of Labor Economics*, Volume 1, 1986.

K. Lang and D. Kropp (1986), "Human Capital Versus Sorting: The Effects of Compulsory Attendance Laws," *Quarterly Journal of Economics* 101, 609-624.

Tyler, John, Richard J. Murnane and John Willett, "Estimating the Labor Market Signaling value of the GED," *Quarterly Journal of Economics*, May 2000. (M)

P. Martorell and D. Clark, "The Signaling Value of a High School Diploma," *Journal of Political Economy*, 122[2], April 2014.

B. Empirical Earnings Functions

Metrics: MM, Chapter 6; AK99, Section 2.

Z. Griliches, "Estimating the Returns to Schooling: Some Econometric Problems," *Econometrica*, January 1977.

Angrist, J.D. and A. Krueger, "Does Compulsory Schooling Attendance Affect Schooling and Earnings?" *Quarterly Journal of Economics*, 106[4], Nov 1991, 979-1014.

J. Kling, "Interpreting Instrumental Variables Estimates of the Returns to Schooling," *JBES* 19 (July 2001). (M)

D. Card, "Estimating the Return to Schooling: Progress on Some Persistent Econometric Problems." *Econometrica* 69 (September 2001).

P. Oreopoulos, "Estimating Average and Local Average Treatment Effects of Education when Compulsory Schooling Laws really Matter," *American Economic Review* 96(1), March 2006, pp. 152-175. See also August 2008 ([Link](#)) correction.

G. Aryal, M. Bhuller, and F. Lange, "Signaling and Employer Learning with Instruments," *The AER* 112 (May 2022).

Returns to experience and OJT

B. Jovanovic (1979) "Firm-Specific Capital and Turnover," *Journal of Political Economy*, 87.6 (December), 1246-60.

J. Altonji and R. Shakotko, "Do Wages Rise with Job Seniority?," *Review of Economic Studies*, July 1987.

Topel Robert (1991). "Specific Capital, Mobility, and Wages: Wages Rise with Job Seniority" *Journal of Political Economy* 99, n1 145-76.

K. M. Murphy and F. Welch, "Empirical Age-Earnings Profiles," *JOLE* 8 (April 1990).

Topel Robert and Michael Ward (1992). "Job Mobility and the Careers of Young Men," *Quarterly Journal of Economics* 107 [2], 439-479.

Lazear, Edward P. *Personnel Economics*, (Cambridge: MIT Press), 1995, Chapter 7.

J. Angrist, "Lifetime Earnings and the Vietnam Era Draft Lottery: Evidence from Social Security Administrative Records," *American Economic Review*, 80[3], June 1990, 313-336.

J. Angrist and S. Chen, "Schooling and the Vietnam-Era GI Bill: Evidence from the Draft Lottery," *American Economic Journal: Applied Economics*, April 2011, 3, 96-119.

Acemoglu, Daron and Steve Pischke (1999). "Beyond Becker: Training in Imperfect Labor Markets," *Economic Journal* vol 109 February 1999, pp F112-142.

Autor, David H. (2001) "Why do Temporary Help Firms Provide Free General Skills Training?", *Quarterly Journal of Economics*, Vol. 116, No. 3, pp. 1409-1448. (M)

Jacobson, Louis, Robert LaLonde and Daniel Sullivan (1993). "Earning Losses of Displaced Workers," *American Economic Review*, vol. 83, pp. 685-709.

C. (A Few) Financial Aid Effects

S.M. Dynarski, "Does Aid Matter? Measuring the Effect of Student Aid on College Attendance and Completion," *The American Econ. Rev.* 93 (2003). (M)

J. Angrist, D. Lang, and P. Oreopoulos, "Incentives and Services for College Achievement: Evidence from a Randomized Trial," *American Economic Journal: Applied Economics* 1 (January 2009).

E.P. Bettinger, BT Long, P. Oreopoulos, and L. Sanbonmatsu, "The Role of Application Assistance and Information in College Decisions," *The QJE* 127 (August 2012).

J. Angrist, D. Lang, and P. Oreopoulos, "Incentives and Services for College Achievement: Evidence from a Randomized Trial," *American Economic Journal: Applied Economics* 1 (January 2009).

S.R. Cohodes and J.S. Goodman, "Merit Aid, College Quality, and College Completion: Mass. Adams' Scholarship as an In-kind Subsidy," *The AEJ: Applied Economics* 6 (2014). (M)

S.M. Dynarski, C.J. Libassi, K. Michelmore, and S. Owen, "Closing the Gap: The Effect of Reducing Complexity and Uncertainty in College Pricing on the Choices of Low-Income Students," *The AER* 111 (June 2021).

J. Angrist, D. Autor, and A. Pallais, "Marginal Effects of Merit Aid for Low-Income Students," *The QJE* 137 (May 2022).

D. School Quality and Education Production

F. Welch, "Black-White Differences in Returns to Schooling," *The AER* 63 (December 1973).

D. Card and A. Krueger, "School Quality and Black-White Relative Earnings: A Direct Assessment," *Quarterly Journal of Economics* 107, February 1992.

A. Krueger, "Experimental Estimates of Education Production Functions," *QJE* 114 (May 1999).

J. Angrist and V. Lavy, "Using Maimonides Rule to Estimate the Effects of Class Size on Academic Achievement," *QJE* 114 (May 1999), 533-575.

J. Angrist, V. Lavy, J. Leder-Luis, and A. Shany, "Maimonides Rule Redux," *AER: Insights* 1 (December 2019).

A. Abdulkadiroglu, J. Angrist, S. Dynarski, T. Kane, and P. Pathak. "Accountability and Flexibility in Public Schools: Evidence from Boston's Charters and Pilots," *The Quarterly Journal of Economics*, 2011, 126(2), 699-748.

S. Dale and A. Krueger, "Estimating the Payoff to Attending a More Selective College: An Application of Selection on Observables and Unobservables," *The QJE* 117 (Nov. 2002).

A. Abdulkadiroglu, J. Angrist, and P. Pathak. "The Elite Illusion: Achievement Effects at Boston and New York Exam Schools," *Econometrica*, 2014, 82(1), 137-196.

J. Angrist, E. Bettinger, M. Kremer "Vouchers for Private Schooling in Colombia: Evidence from a Natural Experiment," *The AER* 92 (December 2002).

A. Abdulkadiroglu, P. Pathak, and C. Walters, "Free to Choose: Can School Choice Reduce Achievement?," *AEJ: Applied Economics* 10 (2018).

J. Angrist and K. Lang, "Does School Integration Generate Peer Effects? Evidence from Boston's Metco Program," *The AER* 94 (December 2004).

J. Angrist, G. Gray-Lobe, C. Idoux, and P. Pathak, "Still Worth the Trip? School Busing Effects in Boston and New York," NBER Working Paper No. 30308 (July 2022).

J. Mountjoy, "Community Colleges and Upward Mobility," *The AER* 112 (August 2022).

Guryan 2004.

Dobbie and Fryer 2011.

Deming et al. 2014

Cullen, Jacob and Levitt 2006.

V. Unions in the Private and Public Sectors

Metrics: MHE, Chapters 5 (Panel Data) and 6 (RD) and MM, Chapter 4 (RD).

H. Gregg Lewis, *Union Relative Wage Effects: A Survey*, University of Chicago Press, 1986.

Farber, Henry. "The Analysis of Union Behavior," Chapter 18 In Orley Ashenfelter and Richard Layard (eds), *The HOLE*, Volume II, 1986.

J.N. Brown and O.C. Ashenfelter, "Testing the Efficiency of Employment Contracts," *Journal of Political Economy* 1986, S40-S87.

O. Ashenfelter and G. Johnson, "Bargaining Theory, Trade Unions, and Industrial Strike Activity," *The AER* 59 (1969), 35-49.

G. Jakubson, "Estimation and Testing of the Union Wage Effect Using Panel Data," *Review of Economic Studies*, 1991, 971-91.

C. Hoxby, "How Teachers Unions Affect Education Production," *The QJE*, August 1996.

J. DiNardo and D.S. Lee, "Economic Impacts of New Unionization on US Private Sector Employers: 1984-2001," *QJE* 119 (2004), 1383-1442.

D. Lee and A. Mas, “Long-run Impacts of Unions on Firms: New Evidence from Financial Markets, 1961-1999,” *The Quarterly Journal of Economics*, 2012, 127(1), 333-378.

B. Frandsen, “The Effects of Collective Bargaining Rights on Public Employee Compensation: Evidence from Teachers, Fire Fighters, and Police,” *The ILRR*, 2016. (M)

B. Frandsen, “The Surprising Impacts of Unionization: Evidence from Matched Employer-Employee Data,” *JOLE* 39 (October 2021). (M)

B. Ba, et al., “Police Officer Assignment and Neighborhood Crime,” NBER Working Paper No. 29243 (Rev. May 2022).

Second Part - Acemoglu

TBD