

# Methods for Applied Microeconomics

Syllabus (Draft) Spring 2022

Sepehr Ekbatani

July 9, 2022

**Instructor:** Sepehr Ekbatani (sepehrekbatani@teias.institute)

**Class Time:** Mon 10 AM-13 PM

**Zoom Link:** <TBA>

**Office Hours:** Sat 3-4 PM

**Teaching Assistants:** NA

## Course Overview:

Introduction to applied microeconomics and its methodologies. Academic research in the field explored using tools from economic theory and econometrics. Topics include approaches to identification, and the economics of

- Education
- Health
- Crime
- Gender
- Urban
- Public

## Class Requirements:

Read the assigned readings, attend each class session and participate in class discussions. *Assigned Readings* papers are the designated “discussion paper” for the session. Each student must give one oral presentation summarizing and critiquing a discussion paper during the term (no more than 20 minutes). The presentation should cover

1. What is the question studied in this paper?
2. Why is it interesting?
3. What is the improvement over the previous literature?
4. What does the paper do?
5. In your view what are the paper’s strengths?
6. What are the paper’s weaknesses?
7. What are the paper’s main conclusions and implications.
8. Does this paper open new questions for future research? On data from Iran?

**Problem Sets:**

There will be several assignments, asking students to replicate a paper on the topic we discuss in the session. These assignments will make up for the most part of the final grade.

**Final Project:** *TBA***Grade Breakdown:** *TBA***Textbooks:**

- Cunningham, Scott. “Causal Inference.” *The Mixtape 1* (2020).
- Angrist, Joshua D., and Jorn-Steffen Pischke. *Mostly harmless econometrics*. Princeton university press, 2008.
- Wooldridge, Jeffrey M. *Introductory econometrics: A modern approach*. Cengage learning, 2015.

**Course Outline:****1. Course Introduction** (Causal Inference, Potential Outcomes Model)

- Cunningham, Scott. “Causal Inference.” *The Mixtape 1* (2020).
- Athey, Susan, and Guido W. Imbens. “The state of applied econometrics: Causality and policy evaluation.” *Journal of Economic Perspectives* 31, no. 2 (2017): 3-32.
- Chetty, Raj. “Sufficient statistics for welfare analysis: A bridge between structural and reduced-form methods.” *Annu. Rev. Econ.* 1, no. 1 (2009): 451-488.
- Imbens, Guido W., and Jeffrey M. Wooldridge. “Recent developments in the econometrics of program evaluation.” *Journal of economic literature* 47, no. 1 (2009): 5-86.

**2. Randomized Controlled Trials**

- Assigned Readings:
  - Dupas, Pascaline. “What matters (and what does not) in households’ decision to invest in malaria prevention?.” *American Economic Review* 99, no. 2 (2009): 224-30.
  - Thornton, Rebecca L. “The demand for, and impact of, learning HIV status.” *American Economic Review* 98, no. 5 (2008): 1829-63.
- Related Readings:
  - Angrist, Joshua, Eric Bettinger, Erik Bloom, Elizabeth King, and Michael Kremer. “Vouchers for private schooling in Colombia: Evidence from a randomized natural experiment.” *American economic review* 92, no. 5 (2002): 1535-1558.
  - Ashraf, Nava, Erica Field, and Jean Lee. “Household bargaining and excess fertility: an experimental study in Zambia.” *American Economic Review* 104, no. 7 (2014): 2210-37.
  - Bertrand, Marianne, Dolly Chugh, and Sendhil Mullainathan. “Implicit discrimination.” *American Economic Review* 95, no. 2 (2005): 94-98.
  - Burszty, Leonardo, Alessandra L. González, and David Yanagizawa-Drott. “Misperceived social norms: Women working outside the home in Saudi Arabia.” *American Economic Review* 110, no. 10 (2020): 2997-3029.
  - Duflo, Esther, Rachel Glennerster, and Michael Kremer (2008). “Using Randomization in Development Economics: A Toolkit.” *Handbook of Development Economics*, Vol 4, 2008,

Chapter 61.

- Deaton, Angus (2009). “Instruments of Development: Randomization in the Tropics, and the Search for the Elusive Keys to Economic Development.” *NBER Working Paper* No. 14690
- Duflo, Esther, Pascaline Dupas, and Michael Kremer. The impact of free secondary education: Experimental evidence from Ghana. No. w28937. National Bureau of Economic Research, 2021.
- Duflo, Esther, Pascaline Dupas, and Michael Kremer. “Peer effects, teacher incentives, and the impact of tracking: Evidence from a randomized evaluation in Kenya.” *American Economic Review* 101, no. 5 (2011): 1739-74.
- Black, Dan A., Jeffrey A. Smith, Mark C. Berger, and Brett J. Noel. “Is the threat of reemployment services more effective than the services themselves? Evidence from random assignment in the UI system.” *American economic review* 93, no. 4 (2003): 1313-1327.
- Karlan, Dean S., and Jonathan Zinman. “Elasticities of demand for consumer credit.” Yale University Economic Growth Center Discussion Paper 926 (2005). Karlan, Dean, and Jonathan Zinman. “Observing unobservables: Identifying information asymmetries with a consumer credit field experiment.” *Econometrica* 77, no. 6 (2009): 1993-2008.
- Krueger, Alan B. “Experimental estimates of education production functions.” *The quarterly journal of economics* 114, no. 2 (1999): 497-532.
- Miguel, Edward, and Michael Kremer. “Worms: identifying impacts on education and health in the presence of treatment externalities.” *Econometrica* 72, no. 1 (2004): 159-217.
- Thomas, Duncan, Elizabeth Frankenberg, Jed Friedman, Jean-Pierre Habicht, Mohammed Hakimi, Nicholas Ingwersen, Nathan Jones et al. “Causal effect of health on labor market outcomes: Experimental evidence.” (2006).
- Todd, Petra E., and Kenneth I. Wolpin. “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, no. 5 (2006): 1384-1417.

### 3. Instrumental Variables

- Assigned Readings:
  - Lleras-Muney, Adriana. “The relationship between education and adult mortality in the United States.” *The Review of Economic Studies* 72, no. 1 (2005): 189-221.
  - Angrist, Joshua D., and William N. Evans. “Children and their parents’ labor supply: evidence from exogenous variation in family size.” *The American Economic Review* 88, no. 3 (1998): 450-477.
- Related Readings:
  - Angrist, Joshua D., and Alan B. Keueger. “Does compulsory school attendance affect schooling and earnings?.” *The Quarterly Journal of Economics* 106, no. 4 (1991): 979-1014.
  - Angrist, Joshua D., Guido W. Imbens, and Donald B. Rubin. “Identification of causal effects using instrumental variables.” *Journal of the American statistical Association* 91, no. 434 (1996): 444-455.
  - Angrist, Joshua D. “Estimating the Labor Market Impact of Voluntary Military Service Using Social Security Data on Military Applicants.” *Econometrica* 66, no. 2 (1998): 249–88.

- Arteaga, Carolina. “Parental Incarceration and Children’s Educational Attainment.” *The Review of Economics and Statistics* (2020): 1-45.
- Bound, John, and David A. Jaeger. “On the Validity of Season of Birth as an Instrument in Wage Equations: A Comment on Angrist & Krueger’s” *Does Compulsory School Attendance Affect Scho.* (1996).
- Bound, John, David A. Jaeger, and Regina M. Baker. “Problems with instrumental variables estimation when the correlation between the instruments and the endogenous explanatory variable is weak.” *Journal of the American statistical association* 90, no. 430 (1995): 443-450.
- Heckman, James J., and Sergio Urzua. “Comparing IV with structural models: What simple IV can and cannot identify.” *Journal of Econometrics* 156, no. 1 (2010): 27-37.
- Imbens, Guido W. “Better LATE than nothing: Some comments on Deaton (2009) and Heckman and Urzua (2009).” *Journal of Economic literature* 48, no. 2 (2010): 399-423.
- Kirkeboen, Lars J., Edwin Leuven, and Magne Mogstad. “Field of study, earnings, and self-selection.” *The Quarterly Journal of Economics* 131, no. 3 (2016): 1057-1111.
- Maestas, Nicole, Kathleen J. Mullen, and Alexander Strand. “Does disability insurance receipt discourage work? Using examiner assignment to estimate causal effects of SSDI receipt.” *American economic review* 103, no. 5 (2013): 1797-1829.
- Vytlačil, Edward. “Independence, monotonicity, and latent index models: An equivalence result.” *Econometrica* 70, no. 1 (2002): 331-341.

#### 4. Difference-in-Differences

- Assigned Readings:

- Alsan, Marcella, and Marianne Wanamaker. “Tuskegee and the health of black men.” *The quarterly journal of economics* 133, no. 1 (2018): 407-455.
- Arteaga, Carolina. “The effect of human capital on earnings: Evidence from a reform at Colombia’s top university.” *Journal of Public Economics* 157 (2018): 212-225.
- Thomas, Duncan, Elizabeth Frankenberg, Jed Friedman, Jean-Pierre Habicht, Mohammed Hakimi, Nicholas Ingwersen, Nathan Jones et al. “Causal effect of health on labor market outcomes: Experimental evidence.” (2006).
- Gruber, Jonathan. “The incidence of mandated maternity benefits.” *The American economic review* (1994): 622-641.

- Related Readings:

- Ahlfeldt, Gabriel M., Stephen J. Redding, Daniel M. Sturm, and Nikolaus Wolf. “The economics of density: Evidence from the Berlin Wall.” *Econometrica* 83, no. 6 (2015): 2127-2189.
- Ashraf, Nava, Natalie Bau, Nathan Nunn, and Alessandra Voena. “Bride price and female education.” *Journal of Political Economy* 128, no. 2 (2020): 591-641.
- Athey, Susan, and Guido W. Imbens. “Identification and inference in nonlinear difference-in-differences models.” *Econometrica* 74, no. 2 (2006): 431-497.
- Baird, Sarah, Joan Hamory Hicks, Michael Kremer, and Edward Miguel. “Worms at work: Long-run impacts of a child health investment.” *The quarterly journal of economics* 131, no. 4 (2016): 1637-1680.

- Bertrand, Marianne, Esther Duflo, and Sendhil Mullainathan. “How much should we trust differences-in-differences estimates?.” *The Quarterly journal of economics* 119, no. 1 (2004): 249-275.
- Bleakley, Hoyt. “Disease and development: evidence from hookworm eradication in the American South.” *The quarterly journal of economics* 122, no. 1 (2007): 73-117.
- Chetty, Raj, Adam Looney, and Kory Kroft. “Salience and taxation: Theory and evidence.” *American economic review* 99, no. 4 (2009): 1145-77.
- Hornbeck, Richard, and Daniel Keniston. “Creative destruction: Barriers to urban growth and the Great Boston Fire of 1872.” *American Economic Review* 107, no. 6 (2017): 1365-98.

## 5. Event Studies

- Assigned Readings:
  - Field, Erica. “Entitled to work: Urban property rights and labor supply in Peru.” *The Quarterly Journal of Economics* 122, no. 4 (2007): 1561-1602.
  - Gentzkow, Matthew, Jesse M. Shapiro, and Michael Sinkinson. “The effect of newspaper entry and exit on electoral politics.” *American Economic Review* 101, no. 7 (2011): 2980-3018.
- Related Readings:
  - Borysyak, K., and X. Jaravel. Revisiting event study designs, with an application to the estimation of the marginal propensity to consume. SSRN working paper, 2017.
  - Schmidheiny, Kurt, and Sebastian Siegloch. “On event study designs and distributed-lag models: Equivalence, generalization and practical implications.” (2019).
  - Freyaldenhoven, Simon, Christian Hansen, Jorge Pérez Pérez, and Jesse M. Shapiro. Visualization, Identification, and Estimation in the Linear Panel Event-Study Design. No. w29170. National Bureau of Economic Research, 2021.
  - Freyaldenhoven, Simon, Christian Hansen, and Jesse M. Shapiro. “Pre-event trends in the panel event-study design.” *American Economic Review* 109, no. 9 (2019): 3307-38.
  - Linden, Leigh, and Jonah E. Rockoff. “Estimates of the impact of crime risk on property values from Megan’s laws.” *American Economic Review* 98, no. 3 (2008): 1103-27.
  - Cutler, David, and Grant Miller. “The role of public health improvements in health advances: the twentieth-century United States.” *Demography* 42, no. 1 (2005): 1-22.
  - Dobkin, Carlos, Amy Finkelstein, Raymond Kluender, and Matthew J. Notowidigdo. “The economic consequences of hospital admissions.” *American Economic Review* 108, no. 2 (2018): 308-52.

## 6. Matching

- Assigned Readings:
  - Imbens, Guido W. “Matching methods in practice: Three examples.” *Journal of Human Resources* 50, no. 2 (2015): 373-419.
  - ...
- Related Readings:
  - Benzarti, Youssef, Dorian Carloni, Jarkko Harju, and Tuomas Kosonen. “What goes up may

not come down: asymmetric incidence of value-added taxes.” *Journal of Political Economy* 128, no. 12 (2020): 4438-4474.

- Rosenbaum, Paul R., and Donald B. Rubin. “The central role of the propensity score in observational studies for causal effects.” *Biometrika* 70, no. 1 (1983): 41-55.
- Imbens, Guido W., Donald B. Rubin, and Bruce I. Sacerdote. “Estimating the effect of unearned income on labor earnings, savings, and consumption: Evidence from a survey of lottery players.” *American economic review* 91, no. 4 (2001): 778-794.
- King, Gary, and Richard Nielsen. “Why propensity scores should not be used for matching.” *Political Analysis* 27, no. 4 (2019): 435-454.
- Abadie, Alberto, and Guido W. Imbens. “On the failure of the bootstrap for matching estimators.” *Econometrica* 76, no. 6 (2008): 1537-1557.

## 7. Synthetic Control

- Assigned Readings:

- Cunningham, Scott, and Manisha Shah. “Decriminalizing indoor prostitution: Implications for sexual violence and public health.” *The Review of Economic Studies* 85, no. 3 (2018): 1683-1715.a
- Mastrobuoni, Giovanni. “Crime is terribly revealing: Information technology and police productivity.” *The Review of Economic Studies* 87, no. 6 (2020): 2727-2753.

- Related Readings:

- Abadie, Alberto, and Javier Gardeazabal. “The economic costs of conflict: A case study of the Basque Country.” *American economic review* 93, no. 1 (2003): 113-132.
- Abadie, Alberto. “Using synthetic controls: Feasibility, data requirements, and methodological aspects.” *Journal of Economic Literature* 59, no. 2 (2021): 391-425.
- Abadie, Alberto, Alexis Diamond, and Jens Hainmueller. “Synthetic control methods for comparative case studies: Estimating the effect of California’s tobacco control program.” *Journal of the American statistical Association* 105, no. 490 (2010): 493-505.
- Abadie, Alberto, Alexis Diamond, and Jens Hainmueller. “Comparative politics and the synthetic control method.” *American Journal of Political Science* 59, no. 2 (2015): 495-510.
- Ferman, Bruno, Cristine Pinto, and Vitor Possebom. “Cherry picking with synthetic controls.” *Journal of Policy Analysis and Management* 39, no. 2 (2020): 510-532.
- Arkhangelsky, Dmitry, Susan Athey, David A. Hirshberg, Guido W. Imbens, and Stefan Wager. Synthetic difference in differences. No. w25532. National Bureau of Economic Research, 2019.
- Ben-Michael, Eli, Avi Feller, and Jesse Rothstein. “The augmented synthetic control method.” *Journal of the American Statistical Association* 116, no. 536 (2021): 1789-1803.
- Ben-Michael, Eli, Avi Feller, and Jesse Rothstein. Synthetic controls with staggered adoption. No. w28886. National Bureau of Economic Research, 2021.

## 8. Regression Discontinuity

- Assigned Readings:

- Lee, David S. “Randomized experiments from non-random selection in US House elections.” *Journal of Econometrics* 142, no. 2 (2008): 675-697.

- Lee, David S., and Justin McCrary. “The deterrence effect of prison: Dynamic theory and evidence.” In *Regression discontinuity designs*. Emerald Publishing Limited, 2017.
- Related Readings:
  - Angrist, Joshua D., and Victor Lavy. “Using Maimonides’ rule to estimate the effect of class size on scholastic achievement.” *The Quarterly journal of economics* 114, no. 2 (1999): 533-575.
  - Black, Sandra E. “Do better schools matter? Parental valuation of elementary education.” *The quarterly journal of economics* 114, no. 2 (1999): 577-599.
  - Card, David, David S. Lee, Zhuan Pei, and Andrea Weber. “Inference on causal effects in a generalized regression kink design.” *Econometrica* 83, no. 6 (2015): 2453-2483.
  - Dahl, Gordon B., Dan-Olof Rooth, and Anders Stenberg. *Family spillovers in field of study*. No. w27618. National Bureau of Economic Research, 2020.
  - Gelman, Andrew, and Guido Imbens. “Why high-order polynomials should not be used in regression discontinuity designs.” *Journal of Business & Economic Statistics* 37, no. 3 (2019): 447-456.
  - Hahn, J., Todd P., & Van der Klaauw, W. (2001). Identification and estimation of treatment effects with a regression-discontinuity design. *Econometrica*, 69(1), 201-209.
  - Calonico, S., Cattaneo, M. D., & Titiunik, R. (2014). Robust nonparametric confidence intervals for regression-discontinuity designs. *Econometrica*. 82(6), 2295-2326.
  - Imbens, G. W., & Lemieux, T. (2008). Regression discontinuity designs: A guide to practice. *Journal of econometrics*, 142(2), 615-635.
  - Imbens, G., & Kalyanaraman, K. (2012). Optimal bandwidth choice for the regression discontinuity estimator. *The Review of economic studies*, 79(3), 933-959.
  - Imbens, G., & Wager, S. (2019). Optimized regression discontinuity designs. *Review of Economics and Statistics*, 101(2), 264-278.
  - Landais, Camille. “Assessing the welfare effects of unemployment benefits using the regression kink design.” *American Economic Journal: Economic Policy* 7, no. 4 (2015): 243-78.
  - Lee, David S., and Thomas Lemieux. “Regression discontinuity designs in economics.” *Journal of economic literature* 48, no. 2 (2010): 281-355.
  - Méndez-Chacón, Esteban, and Diana Van Patten. “Multinationals, monopsony and local development: Evidence from the united fruit company.” Princeton University, Princeton, NJ (2021).

## 9. Choice Models

- Assigned Readings:
  - Rosen, Sherwin. “Hedonic prices and implicit markets: product differentiation in pure competition.” *Journal of political economy* 82, no. 1 (1974): 34-55.
  - ...
- Related Readings:
  - Roback, Jennifer. “Wages, rents, and the quality of life.” *Journal of political Economy* 90, no. 6 (1982): 1257-1278.

- Berry, Steven, James Levinsohn, and Ariel Pakes. “Automobile prices in market equilibrium.” *Econometrica: Journal of the Econometric Society* (1995): 841-890.
- Arcidiacono, Peter, V. Joseph Hotz, and Songman Kang. “Modeling college major choices using elicited measures of expectations and counterfactuals.” *Journal of Econometrics* 166, no. 1 (2012): 3-16.

## 10. Weak and Bartik Instruments

- Assigned Readings:
  - ...
- Related Readings:
  - Angrist, Joshua D., and Alan B. Keueger. “Does compulsory school attendance affect schooling and earnings?.” *The Quarterly Journal of Economics* 106, no. 4 (1991): 979-1014.
  - Andrews, Isaiah, James H. Stock, and Liyang Sun. “Weak instruments in instrumental variables regression: Theory and practice.” *Annual Review of Economics* 11 (2019): 727-753.
  - David, H., David Dorn, and Gordon H. Hanson. “The China syndrome: Local labor market effects of import competition in the United States.” *American Economic Review* 103, no. 6 (2013): 2121-68.
  - Card, David. “Immigration and inequality.” *American Economic Review* 99, no. 2 (2009): 1-21.
  - Acemoglu, Daron, and Pascual Restrepo. “Secular stagnation? The effect of aging on economic growth in the age of automation.” *American Economic Review* 107, no. 5 (2017): 174-79.

## 11. Quantile Regressions

- Assigned Readings:
  - ...
- Related Readings:
  - Koenker, Roger, and Gilbert Bassett Jr. “Regression quantiles.” *Econometrica: journal of the Econometric Society* (1978): 33-50.
  - Koenker, Roger, and Kevin F. Hallock. “Quantile regression.” *Journal of economic perspectives* 15, no. 4 (2001): 143-156.