

Econ 425-1: Graduate Development Economics Microeconomic Topics

Fall Quarter 2021

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Office hours: Wednesday, 5:30 pm to 6:30 pm in KGH 3439

The class meeting time is Mondays and Wednesdays, 3:30 to 5:20 pm in KGH 3301.

Course Description and Requirements

This course is part of a three-part graduate sequence on development economics, focusing mainly on microeconomic topics. The second course will be taught by Prof. Chris Udry in winter quarter. The third course will be taught by Prof. Lori Beaman in spring quarter. To satisfy the field requirement, you must take all three development classes.

One of this course's main objectives is to build skills in reading and writing applied microeconomics papers. Accordingly, I have put less emphasis on giving a thorough overview of the literature (though you should have a thorough knowledge if you intend to specialize in development economics) and more emphasis on teaching a few papers in detail. Also, the papers have been chosen in part because they are vehicles to teach empirical methods relevant to (mostly "reduced form") empirical work such as the Rubin causal model, IV, regression discontinuity design, methods for calculating standard errors and bounds, and power calculations.

The course is aimed primarily at economics PhD students who have satisfied all requirements for the first year. **Prior knowledge of economic theory and econometrics at this level is a prerequisite.**

Your grade for the course will be determined as follows:

- **25%: Research proposals.** This consists of 2 assignment aimed at developing research ideas on development economics topics that would be suitable. You should state the research question, briefly motivate its importance, how you propose to answer it. Explain how your project would advance what is known from previous research, and propose how you would answer it (empirical strategy + what data sources you would need). For the first proposal, the "how you would answer it" part can be how you would answer it in principle. For the second proposal, you should aim for something feasible, where you have a worked-out empirical strategy and data source. The proposal should be about 2 pages long (no more than 2.5 pages long). Use at least 11 point font. The due dates are October 11 and November 15. Thursday, November 5.
- **15%: Referee Report.** You are asked to write a referee report, due October 27 on [Brown and Andrabi \(2021\)](#).

The referee report should be 3 pages long (longer is not better, but you're unlikely to be able to be thorough enough in less than 1.5 pages), with a one-paragraph summary of the paper,

a discussion of its importance/contribution, and a numbered list with your main comments, and then a numbered list of minor comments if you'd like to add them. Again, this should go without saying, but you must use 11 point font or larger. There is a helpful Journal of Economic Perspectives article by Berk et al., published in 2017, with advice on writing referee reports.

- **25%: In-class Presentation & Comments on Presented Papers.** The exact format of this component of the class will depend on class size. Tentatively, students will pair up to give a 20-25 minute presentation on one paper and lead a class discussion. All other students are required to read these papers in advance and prepare and email me in advance of the class a short answer to each of the following questions:
 - What is biggest strength of the paper?
 - What is the biggest weakness of the paper?
 - What is a future direction of research that seems fruitful based on where this paper leaves things?

Note that I will not provide written feedback on these submitted answers, though completing them and putting effort into them will be a part of your course grade. The main purpose is to get you to think about the paper so that the discussion is more fruitful. In class, I will randomly choose one student to give his or her comments in class. The presentation will be 25 minutes, followed by 15 minutes of discussion. You should present one of the papers on the syllabus marked with a dagger. The papers discussed in student presentations are required reading for all students. Please prepare your list of top 5 choices by October 6. Students will choose in randomized order (hence the need for choices beyond a top choice.)

- **10%: Class Participation.** The class will be more engaging for all if you do the required readings in advance and contribute to class discussion. As such, class participation is a component of your course grade. I will sometimes cold call on students with the assumption that you have done the readings.
- **25%: Final Exam.** There will be a final examination in class on November 24, the last day of class.

Other Policies

Class info disseminated by email: I will not be using the Canvas site for this class. I will email you with announcements, updated copies of the syllabus, slides before each class, etc.

Development seminar: For Northwestern students, I strongly encourage you to attend the Wednesday development lunch and Thursday seminar (on the weeks it is held). Students in their second year and above who specialize in development, i.e., who plan to have development faculty as advisors, are expected to attend these regularly.

Students with disabilities: Northwestern University is committed to providing the most accessible learning environment as possible for students with disabilities. Should you anticipate or experience disability-related barriers in the academic setting, please contact AccessibleNU to move forward with the university's established accommodation process (e: accessiblenu@northwestern.edu;

p: 847-467-5530). If you already have established accommodations with AccessibleNU, please let me know as soon as possible, preferably within the first two weeks of the term, so we can work together to implement your disability accommodations. Disability information, including academic accommodations, is confidential under the Family Educational Rights and Privacy Act.

Support for wellness and mental health: Northwestern University is committed to supporting the wellness of our students. Student Affairs has multiple resources to support student wellness and mental health. If you are feeling distressed or overwhelmed, please reach out for help. Students can access confidential resources through the Counseling and Psychological Services (CAPS), Religious and Spiritual Life (RSL) and the Center for Awareness, Response and Education (CARE). Additional information on all of the resources mentioned above can be found here:

- www.northwestern.edu/counseling/
- www.northwestern.edu/religious-life/
- www.northwestern.edu/care/

Reading List

No textbook is required, but I recommend Angrist and Pischke (2008), *Mostly Harmless Econometrics*, to any student planning to write an applied micro thesis. It provides the best short treatment of many of the empirical methods discussed in the course.

The reading list comprises mainly published papers and working papers. Readings marked with 2 stars (★★) are required. Readings without a mark will be taught in lecture, but in less detail. Readings marked with a dagger (†) are potential papers for your in-class presentations. Most of the readings can be found through the library's e-resources (e.g., JSTOR). Links to many of them can be found at www.seemajayachandran.com/econ425.html.

Schedule

Wed Sep 22 Introduction and Rubin Causal Model

[Banerjee and Duflo \(2007\)](#) ★★

Monday Sept 27 Rubin Causal Model (continued) [*Instrumental variables*]

[Angrist et al. \(1996\)](#) ★★

[Angrist and Pischke \(2008, Chapter 2\)](#)

Wed Sept 29 Effect of income on health

[Haushofer and Shapiro \(2016\)](#) ★★

[Banerjee and Duflo \(2009\)](#) ★★

[Angrist and Pischke \(2008, Chapter 4\)](#)

[Cunha \(2014\)](#)

[Egger et al. \(2019\)](#) †

Mon Oct 4 Preventative health care + quality of social services

Cohen and Dupas (2010) **
Chaudhury et al. (2006) **
Dupas (2014)
Kremer (2002)
Muralidharan and Sundararaman (2011)

Wed Oct 6 Effect of education on income [*Difference-in-differences*]

Duflo (2001) **
Angrist and Pischke (2008, Chapter 5)
Jensen (2010)

Mon Oct 11 School quality and peer effects [*Regression discontinuity*]

Duflo et al. (2011a) **
Imbens and Lemieux (2008)
Muralidharan and Sundararaman (2011)
Angrist and Pischke (2008, Chapter 6)
Muralidharan and Sundararaman (2015) †
Dizon-Ross (2019) †

Wed Oct 13 Effect of health on education [*Clustered standard errors*]

Miguel and Kremer (2004) **
Bertrand et al. (2004)
Kremer and Miguel (2007)
Angrist and Pischke (2008, Chapter 8)
Jayachandran and Lleras-Muney (2009)
Graff Zivin et al. (2009)
Bleakley (2010) †

Mon Oct 18 Catch-up (+ RCTs) + Student presentation #1

Olken (2020) [[link](#)]
Deaton (2009)
Imbens (2010)

Wed Oct 20 Behavioral economics + Student presentation #2

[Kremer et al. \(2019\)](#)

[Hanna et al. \(2014\)](#)

[Duflo et al. \(2011b\)](#)

[Mani et al. \(2013\)](#)

[Lowe \(2021\)](#) †

[Aggarwal et al. \(2020\)](#) †

Mon Oct 25 Gender inequality

[Jayachandran \(2015\)](#) **

[Jayachandran and Kuziemko \(2011\)](#)

[Ebenstein \(2010\)](#)

[Deaton \(1989\)](#)

Wed Oct 27 Property rights + Student presentation #3

[Banerjee et al. \(2002\)](#)

[Field \(2007\)](#)

Mon Nov 1 Firms + Student presentation #4

[Bloom et al. \(2013\)](#)

[Atkin et al. \(2017\)](#) †

[Kremer \(1993\)](#) †

Wed Nov 3 Electoral politics + Student presentation #5

[Ferraz and Finan \(2008\)](#)

[Fujiwara \(2015\)](#)

[Ferraz and Finan \(2011\)](#)

[Chattopadhyay and Duflo \(2004\)](#)

Mon Nov 8 Infrastructure

[Donaldson \(2018\)](#) **

[Jensen \(2007\)](#)

[Harari \(2020\)](#)

[Dinkelman \(2011\)](#)

[Duflo and Pande \(2007\)](#) †

[Asher and Novosad \(2020\)](#) †

Wed Nov 10 Corruption + Student presentation #6

Olken (2007) **
Olken and Barron (2009)
Banerjee (1997)
Fisman (2001)
Mauro (1995)
Shleifer and Vishny (1993)

Mon Nov 15 Taxation + Student presentation #7

Jensen (2019)

Wed Nov 17 Environment + Student presentation #8

Jayachandran (2021)

Monday Nov 22 Environment

Oliva (2015) **
Jayachandran et al. (2017)
Chen et al. (2013)
Dell et al. (2012)
Lipscomb and Mobarak (2016) †
Blakeslee et al. (2020) †
Ryan and Sudarshan (2020) †

Wed Nov 24 In-class final exam

Presentation Schedule and Readings

- Oct 18: Egger et al. (2019) by Christopher Sims & Sebastian Sardon
- Oct 20: Dizon-Ross (2019) by Ludovica Mosillo & Matteo Ruzzante
- Oct 27: Bleakley (2010) by Andrei Iakovlev & Kenneth Fu
- Nov 1: Lowe (2021) by Giovanni Pisauero & Elena Stella
- Nov 3: Kremer (1993) by Vageesha Bainwala & Elizabeth Jaramillo
- Nov 10: Atkin et al. (2017) by Sanjana Ghosh & Xizhao Wang
- Nov 15: Asher and Novosad (2020) by Valerio Di Tommaso & Federico Crippa
- Nov 17: Lipscomb and Mobarak (2016) by Sebastian Poblete Coddou & Bruno Fava

References

- AGGARWAL, S., R. DIZON-ROSS, AND A. D. ZUCKER (2020): “Incentivizing behavioral change: the role of time preferences,” .
- ANGRIST, J. D., G. W. IMBENS, AND D. B. RUBIN (1996): “Identification of Causal Effects Using Instrumental Variables,” *Journal of the American Statistical Association*, 91, 444–455.
- ANGRIST, J. D. AND J.-S. PISCHKE (2008): *Mostly Harmless Econometrics: An Empiricist’s Companion*, Princeton, NJ: Princeton University Press.
- ASHER, S. AND P. NOVOSAD (2020): “Rural roads and local economic development,” *American economic review*, 110, 797–823.
- ATKIN, D., A. KHANDELWAL, AND A. OSMAN (2017): “Exporting and Firm Performance: Evidence from a Randomized Experiment,” *Quarterly Journal of Economics*, 132, 551–615.
- BANERJEE, A. V. (1997): “A Theory of Misgovernance,” *Quarterly Journal of Economics*, 112, 1289–1332.
- BANERJEE, A. V. AND E. DUFLO (2007): “The Economic Lives of the Poor,” *Journal of Economic Perspectives*, 21, 141–167.
- (2009): “The Experimental Approach to Development Economics,” *Annual Review of Economics*, 1.
- BANERJEE, A. V., P. L. GERTLER, AND M. GHATAK (2002): “Empowerment and Efficiency: Tenancy Reform in West Bengal,” *Journal of Political Economy*, 110, 239–280.
- BERTRAND, M., E. DUFLO, AND S. MULLAINATHAN (2004): “How Much Should We Trust Differences-in-Differences Estimates?” *Quarterly Journal of Economics*, 119, 249–275.
- BLAKESLEE, D., R. FISHMAN, AND V. SRINIVASAN (2020): “Way down in the hole: Adaptation to long-term water loss in rural India,” *American Economic Review*, 110, 200–224.
- BLEAKLEY, H. (2010): “Malaria Eradication in the Americas: A Retrospective Analysis of Childhood Exposure,” *American Economic Journal. Applied Economics*, 2.
- BLOOM, N., B. EIFERT, A. MAHAJAN, D. MCKENZIE, AND J. ROBERTS (2013): “Does Management Matter: Evidence from India,” *Quarterly Journal of Economics*, 128, 1–51.
- BROWN, C. AND T. ANDRABI (2021): “Inducing positive sorting through performance pay: Experimental evidence from Pakistani schools,” *working paper, University of Chicago*.
- CHATTOPADHYAY, R. AND E. DUFLO (2004): “Women as Policy Makers: Evidence from a Nationwide Randomized Experiment in India,” *Econometrica*, 72, 1409–1443.
- CHAUDHURY, N., J. HAMMER, M. KREMER, K. MURALIDHARAN, AND F. H. ROGERS (2006): “Missing in Action: Teacher and Health Worker Absence in Developing Countries,” *Journal of Economic Perspectives*, 20, 91–116.

- CHEN, Y., A. EBENSTEIN, M. GREENSTONE, AND H. LI (2013): “Evidence on the Impact of Sustained Exposure to Air Pollution on Life Expectancy From China’s Huai River Policy,” *Proceedings of the National Academy of Sciences*, 110, 12936–12941.
- COHEN, J. AND P. DUPAS (2010): “Free Distribution or Cost-Sharing? Evidence from a Randomized Malaria Prevention Experiment,” *Quarterly Journal of Economics*, 125, 1–45.
- CUNHA, J. (2014): “Testing Paternalism: Cash vs. In-kind Transfers in Rural Mexico,” *American Economic Journal: Applied Economics*, 6, 195–230.
- DEATON, A. (1989): “Looking for Boy-Girl Discrimination in Household Expenditure Data,” *World Bank Economic Review*, 3, 1–15.
- DEATON, A. S. (2009): “Instruments of Development: Randomization in the Tropics, and the Search for the Elusive Keys to Economic Development,” Tech. rep., National Bureau of Economic Research.
- DELL, M., B. F. JONES, AND B. A. OLKEN (2012): “Temperature Shocks and Economic Growth: Evidence from the Last Half Century,” *American Economic Journal: Macroeconomics*, 4, 66–95.
- DINKELMAN, T. (2011): “The Effects of Rural Electrification on Employment: New Evidence from South Africa,” *American Economic Review*, 101, 3078–3108.
- DIZON-ROSS, R. (2019): “Parents’ Beliefs About Their Children’s Academic Ability: Implications for Educational Investments,” *American Economic Review*, 109, 2728–65.
- DONALDSON, D. (2018): “Railroads of the Raj: Estimating the Impact of Transportation Infrastructure,” *American Economic Review*, 108, 899–934.
- DUFLO, E. (2001): “Schooling and Labor Market Consequences of School Construction in Indonesia: Evidence from an Unusual Policy Experiment,” *American Economic Review*, 91, 795–813.
- DUFLO, E., P. DUPAS, AND M. KREMER (2011a): “Peer Effects, Teacher Incentives, and the Impact of Tracking: Evidence from a Randomized Evaluation in Kenya,” *American Economic Review*, 101, 1739–74.
- DUFLO, E., M. KREMER, AND J. ROBINSON (2011b): “Nudging Farmers to Use Fertilizer: Theory and Experimental Evidence from Kenya,” *American Economic Review*, 101, 2350–2390.
- DUFLO, E. AND R. PANDE (2007): “Dams,” *Quarterly Journal of Economics*, 122.
- DUPAS, P. (2014): “Short-Run Subsidies and Long-Run Adoption of New Health Products: Evidence from a Field Experiment,” *Econometrica*, 82, 197–228.
- EBENSTEIN, A. (2010): “The “Missing Girls” of China and the Unintended Consequences of the One Child Policy,” *Journal of Human Resources*, 45, 87–115.
- EGGER, D., J. HAUSHOFER, E. MIGUEL, P. NIEHAUS, AND M. WALKER (2019): “General Equilibrium Effects of Cash Transfers: Experimental Evidence from Kenya,” Working paper.
- FERRAZ, C. AND F. FINAN (2008): “Exposing Corrupt Politicians: The Effect of Brazil’s Publicly Released Audits on Electoral Outcomes,” *Quarterly Journal of Economics*, 123, 703–744.

- (2011): “Motivating Politicians: The Impacts of Monetary Incentives on Quality and Performance,” Working paper, UCLA.
- FIELD, E. (2007): “Entitled to Work: Urban Property Rights and Labor Supply in Peru,” *Quarterly Journal of Economics*, 122, 1561–1602.
- FISMAN, R. (2001): “Estimating the Value of Political Connections,” *American Economic Review*, 91, 1095–1102.
- FUJIWARA, T. (2015): “Voting Technology, Political Responsiveness, and Infant Health: Evidence from Brazil,” *Econometrica*, 83, 423–464.
- GRAFF ZIVIN, J. S., H. THIRUMURTHY, AND M. GOLDSTEIN (2009): “AIDS Treatment and Intra-household Resource Allocations: Children’s Nutrition and Schooling in Kenya,” *Journal of Public Economics*, 93, 1008–1015.
- HANNA, R., S. MULLAINATHAN, AND J. SCHWARTZSTEIN (2014): “Learning through noticing: Theory and evidence from a field experiment,” *The Quarterly Journal of Economics*, 129, 1311–1353.
- HARARI, M. (2020): “Cities in Bad Shape: Urban Geometry in India,” *American Economic Review*, 110, 2377–2421.
- HAUSHOFER, J. AND J. SHAPIRO (2016): “The short-term impact of unconditional cash transfers to the poor: experimental evidence from Kenya,” *Quarterly Journal of Economics*, 131, 1973–2042.
- IMBENS, G. W. (2010): “Better LATE than Nothing: Some Comments on Deaton (2009) and Heckman and Urzua (2009),” *Journal of Economic literature*, 48, 399–423.
- IMBENS, G. W. AND T. LEMIEUX (2008): “Regression discontinuity designs: A guide to practice,” *Journal of Econometrics*, 142, 615–635.
- JAYACHANDRAN, S. (2015): “The Roots of Gender Inequality in Developing Countries,” *Annual Review of Economics*, 7, 63–88.
- (2021): “How economic development influences the environment,” Working paper, Northwestern University.
- JAYACHANDRAN, S., J. DE LAAT, E. F. LAMBIN, C. Y. STANTON, R. AUDY, AND N. E. THOMAS (2017): “Cash for Carbon: A Randomized Trial of Payments for Ecosystem Services to Reduce Deforestation,” *Science*, 357, 267–273.
- JAYACHANDRAN, S. AND I. KUZIEMKO (2011): “Why Do Mothers Breastfeed Girls Less Than Boys?: Evidence and Implications for Child Health in India,” *Quarterly Journal of Economics*, 126, 1485–1538.
- JAYACHANDRAN, S. AND A. LLERAS-MUNEY (2009): “Life Expectancy and Human Capital Investments: Evidence from Maternal Mortality Declines,” *Quarterly Journal of Economics*, 124, 349–397.

- JENSEN, A. (2019): “Employment structure and the rise of the modern tax system,” Working paper, Harvard University.
- JENSEN, R. (2007): “The Digital Divide: Information (Technology), Market Performance and Welfare in the South Indian Fisheries Sector,” *Quarterly Journal of Economics*, 122.
- (2010): “The (Perceived) Returns to Education and the Demand for Schooling,” *Quarterly Journal of Economics*, 125, 515–548.
- KREMER, M. (1993): “The O-Ring Theory of Economic Development,” *Quarterly Journal of Economics*, 108, 551–75.
- (2002): “Pharmaceuticals and the Developing World,” *Journal of Economic Perspectives*, 16, 67–90.
- KREMER, M. AND E. MIGUEL (2007): “The Illusion of Sustainability,” *Quarterly Journal of Economics*, 122, 1007–1065.
- KREMER, M., G. RAO, AND F. SCHILBACH (2019): “Behavioral development economics,” in *Handbook of Behavioral Economics: Applications and Foundations 1*, Elsevier, vol. 2, 345–458.
- LIPSCOMB, M. AND A. M. MOBARAK (2016): “Decentralization and Pollution Spillovers: Evidence From the Re-Drawing of County Borders in Brazil,” *The Review of Economic Studies*, 84, 464–502.
- LOWE, M. (2021): “Types of contact: A field experiment on collaborative and adversarial caste integration,” *American Economic Review*, 111, 1807–44.
- MANI, A., S. MULLAINATHAN, E. SHAFIR, AND J. ZHAO (2013): “Poverty Impedes Cognitive Function,” *Science*, 341, 976–980.
- MAURO, P. (1995): “Corruption and Growth,” *Quarterly Journal of Economics*, 110, 681–712.
- MIGUEL, E. AND M. KREMER (2004): “Worms: Identifying Impacts on Education and Health in the Presence of Treatment Externalities,” *Econometrica*, 72, 159–217.
- MURALIDHARAN, K. AND V. SUNDARARAMAN (2011): “Teacher Performance Pay: Experimental Evidence from India,” *Journal of Political Economy*, 119, 39–77.
- (2015): “The Aggregate Effect of School Choice: Evidence From a Two-Stage Experiment in India,” *Quarterly Journal of Economics*, 130, 1011–1066.
- OLIVA, P. (2015): “Environmental Regulations and Corruption: Automobile Emissions in Mexico City,” *Journal of Political Economy*, 123, 686–724.
- OLKEN, B. A. (2007): “Monitoring Corruption: Evidence from a Field Experiment in Indonesia,” *Journal of Political Economy*, 115, 200–249.
- (2020): “Banerjee, Duflo, Kremer, and the Rise of Modern Development Economics,” *The Scandinavian Journal of Economics*, 122, 853–878.

OLKEN, B. A. AND P. BARRON (2009): “The Simple Economics of Extortion: Evidence from Trucking in Aceh,” *Journal of Political Economy*, 117, 417–452.

RYAN, N. AND A. SUDARSHAN (2020): “Rationing the commons,” Working paper, Yale University.

SHLEIFER, A. AND R. W. VISHNY (1993): “Corruption,” *Quarterly Journal of Economics*, 108.