

14.772: Development Economics: Macroeconomic Issues

Lectures: Tuesday 2:30 - 4:00pm, Thursday 2:30 - 4:00pm, E52-532

Recitations: Thursday 12:00-1:00pm, E51-151

Instructors: Abhijit Banerjee, E52-540, banerjee@mit.edu
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Teaching Assistant: Jacob Moscona, 917-547-2362, moscona@mit.edu (Office Hours: Thursdays 9:00-10:30am or by appointment)

Website: <https://learning-modules.mit.edu/class/index.html?uuid=/course/14/sp20/14.772#info>

Grading: 30% Problem Sets (Banerjee/Balboni/Olken Sections), 30% Research Proposal & Presentation (Townsend Section), 30% Exam, 10% Participation

Townsend Section

(Lectures 2/25-3/12, 3/31-4/16)

Lecture 1: Interpreting Experiments through Structural Models (2/25)

*"The Impact of Credit on Village Economies." Joseph P. Kaboski and Robert M. Townsend. American Economic Journal: Applied Economics 4(2), April 2012: 98-133.

*"A Structural Evaluation of a Large-Scale Quasi-Experimental Microfinance Initiative." Joseph Kaboski and Robert M. Townsend. Econometrica 79(5), September 2011: 1357- 1406.

*Abhijit Banerjee, Emily Breza, Robert Townsend, Diego Vera-Cossio. 2019. Access to credit and productivity: Evidence from Thai Villages

David Lagakos & Ahmed Mushfiq Mobarak & Michael E. Waugh, 2018. "The Welfare Effects of Encouraging Rural-Urban Migration," NBER Working Papers 24193, National Bureau of Economic Research, Inc.

Todd, Petra, E., and Kenneth I. 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.

Behrman, Jere R., and Petra Todd. 2000. "Randomness in the Experimental Samples of PROGRESA (Education, Health, and Nutrition Program)." Washington, DC: International Food Policy Research Institute.

Attanasio, Orazio P., Costas Meghir, and Ana Santiago. "Education choices in Mexico: using a structural model and a randomized experiment to evaluate Progresca." *The Review of Economic Studies* 79.1 (2012): 37-66.

Kremer, Michael, et al. "Spring cleaning: Rural water impacts, valuation, and property rights institutions." *The Quarterly Journal of Economics* 126.1 (2011): 145-205.

Kreindler, Gabriel. "The Welfare Effect of Road Congestion Pricing: Experimental Evidence and Equilibrium Implications," Working Paper. https://drive.google.com/file/d/1bn6mjwH_-QvpDMuPMWIGRCLSQVyC_09C/view.

Duflo, Esther, Rema Hanna, and Stephen P. Ryan. "Incentives work: Getting teachers to come to school." *American Economic Review* 102.4 (2012): 1241-78.

Meghir, Costas Mishfiq Mobarak, Conrina Mommaerts, Melanie Morten. "Migration and Informal Insurance." Working Paper. http://stanford.edu/~memorten/ewExternalFiles/MMMM_Bangladesh.pdf

Bryan, Gharad, Shyamal Chowdhury, and Ahmed Mushfiq Mobarak. "Underinvestment in a profitable technology: The case of seasonal migration in Bangladesh." *Econometrica* 82.5 (2014): 1671-1748.

Bergquist, Lauren F. (2017), "Pass-through, Competition, and Entry in Agricultural Markets: Experimental Evidence from Kenya", Working Paper.

Allende, Claudia, Francisco Gallego, and Christopher Neilson. "The equilibrium effects of informed school choice." Working paper, Princeton University, 2019.
<https://christopherneilson.github.io/work/documents/AllendeGallegoNeilson2019/SchoolChoiceInfoExp.pdf>

Lecture 2: Scaling Up RCTs (2/27)

*Ehrlich, Daniel and Robert Townsend. 2018. "Spatial Spillovers and Labor Market Dynamics: Evidence from Village Financial Interventions in Thailand"

*Ji Yan and Robert M. Townsend, Bank Branch Expansion vs International Capital Flows: Integrating Local Spatial Markets and Macro Aggregates, 2018

Bergquist, Lauren Falcao, et al. *Scaling Agricultural Policy Interventions: Theory and Evidence from Uganda*. Working Paper, 2019.

Buera, Francisco J., Joseph P. Kaboski, and Yongseok Shin. "The macroeconomics of microfinance." No. w17905. National Bureau of Economic Research, 2012.

Buera, Kaboski, Shin. "Macro Perspective on Assets Grant Program: Occupation and Wealth Mobility, AER, May 2014

Donovan, Kevin. "Agricultural risk, intermediate inputs, and cross-country productivity differences." Working Paper (2018).
http://kevindonovan.weebly.com/uploads/8/7/0/2/8702484/donovan_riskprod_web.pdf

Duflo, Esther. "Schooling and labor market consequences of school construction in Indonesia: Evidence from an unusual policy experiment." *American economic review* 91.4 (2001): 795-813.

Hsiao, Allan. "Targeting Infrastructure Investment: Evidence from School Construction in Indonesia." July 2019

Bryan, Gharad, and Melanie Morten. "The aggregate productivity effects of internal migration: Evidence from Indonesia." *Journal of Political Economy* 127.5 (2019): 2229-2268.

Greenwood, Jeremy, et al. "An equilibrium model of the African HIV/AIDS epidemic." *Econometrica* 87.4 (2019): 1081-1113.

Breza, Emily, and Cynthia Kinnan. "Measuring the equilibrium impacts of credit: Evidence from the Indian microfinance crisis." No. w24329. National Bureau of Economic Research, 2018.

Dennis Egger, Johannes Haushofer, Edward Miguel, Paul Niehaus, and Michael Walker (2019). "General Equilibrium Effects of Cash Transfers: Experimental Evidence from Kenya", unpublished working paper.

Macro gifting natural experiments

Johnson, David S., Jonathan A. Parker, and Nicholas S. Souleles. "Household expenditure and the income tax rebates of 2001." *American Economic Review* 96.5 (2006): 1589-1610.

Parker, Jonathan A., et al. "Consumer spending and the economic stimulus payments of 2008." *American Economic Review* 103.6 (2013): 2530-53.

Macro and regional economies and aggregate effects

Wolf, Christian K. "The Missing Intercept: A Demand Equivalence Approach." Working Paper (2019). https://scholar.princeton.edu/sites/default/files/ckwolf/files/missing_intercept.pdf.

Mian, Atif, and Amir Sufi. "The consequences of mortgage credit expansion: Evidence from the US mortgage default crisis." *The Quarterly Journal of Economics* 124.4 (2009): 1449-1496.

Beraja, Martin, et al. "Regional heterogeneity and the refinancing channel of monetary policy." *The Quarterly Journal of Economics* 134.1 (2019): 109-183.

Beraja, Martin, Erik Hurst, and Juan Ospina. "The aggregate implications of regional business cycles." *Econometrica* 87.6 (2019): 1789-1833.

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* 103.6 (2013): 2121-68.

Chodorow-Reich, Gabriel, et al. "Cash and the economy: Evidence from India's demonetization." *The Quarterly Journal of Economics* 135.1 (2020): 57-103.

Lecture 3: Choosing Models, getting by with less Structure: Sufficient Partial Identification and Aggregation (3/3)

H. Scarf, with the collaboration of T. Hansen, *The computation of economic equilibria* (Yale University Press, New Haven, 1973).

Jones, Ronald W., and J. Peter Neary. "The positive theory of international trade." *Handbook of international economics* 1 (1984): 1-62.

Dekle, Robert, Jonathan Eaton, and Samuel Kortum. "Unbalanced trade." *American Economic Review* 97.2 (2007): 351-355.

Dawkins, Christina, T.N. Srinivasan and John Whalley (2001) "Chapter 58 - Calibration," in James J. Heckman and Edward Leamer (Eds.) *Handbook of Econometrics*, Volume 5. Elsevier, pp. 3653-3703.

Intermediate Approaches

*Harberger, Arnold C. "Three Basic Postulates for Applied Welfare Economics: An Interpretive Essay." *Journal of Economic Literature* 9, no. 3 (1971): 785-97. <http://www.jstor.org/stable/2720975>.

*Chetty, Raj 2009. Sufficient Statistics for Welfare Analysis: A Bridge Between Structural and Reduced-Form Methods. *Annual Review of Economics* 1: 451-488. http://www.rajchetty.com/chettyfiles/suffstat_ar.pdf

*Chetty, Raj 2006. A General Formula for the Optimal Level of Social Insurance. *Journal of Public Economics* 90: 1879-1901. http://www.rajchetty.com/chettyfiles/ui_formula_jpube.pdf

Chetty, Raj and Adam Looney, 2006. Consumption Smoothing and the Welfare Consequences of Social Insurance in Developing Economies, *Journal of Public Economics* 90: 2351-2356.

Melitz, Marc J., and Stephen J. Redding. "Missing Gains from Trade?" *The American Economic Review* 104, no. 5 (2014): 317-21. <http://www.jstor.org/stable/42920956>.

Arkolakis, Costas, Arnaud Costinot, and Andrés Rodríguez-Clare. "New trade models, same old gains?." *American Economic Review* 102.1 (2012): 94-130.

Parallels in the US

Beraja, Martin. "Counterfactual equivalence in Macroeconomics." Working Paper (2018). <https://economics.mit.edu/files/17173>

Sarto, Andres. "Recovering Macro Elasticities from Regional Data." Working Paper (2018). <https://economics.mit.edu/files/16160>

Sraer, David, and David Thesmar. "A sufficient statistics approach for aggregating firm-level experiments." No. w24208. National Bureau of Economic Research, 2018.

Caliendo, Lorenzo, Maximiliano Dvorkin, and Fernando Parro. "Trade and labor market dynamics: General equilibrium analysis of the china trade shock." *Econometrica* 87.3 (2019): 741-835.

Quantifying the Losses from International Trade Spencer G. Lyon New York University Michael E. Waugh New York University and NBER March 2019

Lecture 4: Just execute RCT, IV, Diff-in Diff? Some Cautionary Tales (3/5)

*Townsend, R.M. and Urzua, S., 2009. Measuring the impact of financial intermediation: linking contract theory to econometric policy evaluation." *Macroeconomic Dynamics*, 13(S2), pp. 268-316

Heckman, James J. and Vytlacil, Edward J. (2001) Local instrumental variables. In Cheng Hsiao, Kimio Morimune, and James L. Powell (eds.), *Nonlinear Statistical Modeling: Proceedings of the Thirteenth International Symposium in Economic Theory and Econometrics: Essays in Honor of Takeshi Amemiya*, New York: Cambridge University Press, pp. 1-46.

Imbens, Guido W. and Angrist, Joshua D. (1994) Identification and estimation of local average treatment effects. *Econometrica* 62, 467-475.

Jeong, Hyeok, and Robert M. Townsend. "Growth and inequality: Model evaluation based on an estimation-calibration strategy." *Macroeconomic dynamics* 12.S2 (2008): 231-284.

Xavier Giné, Robert M. Townsend, Evaluation of financial liberalization: a general equilibrium model with constrained occupation choice, *Journal of Development Economics*, Volume 74, Issue 2, 2004, Pages 269-307, <https://doi.org/10.1016/j.jdeveco.2003.03.005>.

Robert M. Townsend and Kenichi Ueda (2006), Financial Deepening, Inequality, and Growth: A Model-Based Quantitative Evaluation, *The Review of Economic Studies*, Vol. 73, No. 1 (Jan., 2006), pp. 251-280, <http://www.jstor.org/stable/3700624>

Robert M. Townsend, Kenichi Ueda (2010), Welfare Gains from Financial Liberalization, Volume 51, Issue 3, August 2010, Pages 553–597, <http://onlinelibrary.wiley.com/doi/10.1111/j.1468-2354.2010.00593.x/abstract>

Tiago Florido, “Nonlinear Difference-in-Differences and Noisy Trends,” March 2017

Lecture 5: Building from Below, Risk Sharing without Obstacles as Key Benchmark and Networks (3/10)

Basic Risk-Sharing

*Townsend, Robert M. "Risk and Insurance in Village India." *Econometrica* 62, no. 3 (1994): 539-91. doi:10.2307/2951659. •

*Krislert Samphantharak & Robert M. Townsend, 2018. "Risk and Return in Village Economies," *American Economic Journal: Microeconomics*, American Economic Association, vol. 10(1), pages 1-40, February.

*Cynthia Kinnan, Krislert Samphantharak, Robert Townsend, and Diego Vera-Cossio. “Risk-sharing, economic networks and the transmission of shocks.” Working Paper (2019).

Chiappori, Pierre-Andre, K. Samphantharak, Sam Schulhofer-Wohl, and Robert M. Townsend. 2014. “Heterogeneity and Risk Sharing in Village Economies.” *Quantitative Econ.* 5 (1): 1–27.

Advani, Arun. “Insurance Networks and Poverty Traps.” Working Paper (2019). https://arunadvani.github.io/papers/Advani2018_InsuranceNetworksAndPovertyTraps.pdf

Parit Sripakdeevong and Robert Townsend. "The Village Money Market Revealed: Credit Chains and Shadow Banking." Working Paper (2017).
http://www.robertmtownsend.net/sites/default/files/files/papers/working_papers/The_Village_Money_Market_Revealed_-111919.pdf

In the US

Schulhofer-Wohl, Sam. "Heterogeneity and tests of risk sharing." *Journal of Political Economy* 119.5 (2011): 925-958.

Zorzi, Nathan, "Investment Dynamics and Cyclical Redistribution." Working Paper (2019).
<https://economics.mit.edu/files/18667>

Patterson, Christina, "The Matching Multiplier and the Amplification of Recessions," Mimeo, MIT 2019.

Networks and Supply Chains in the US and other Economies

Bernard, Andrew B., Andreas Moxnes, and Yukiko U. Saito. "Production networks, geography, and firm performance." *Journal of Political Economy* 127.2 (2019): 639-688.

Bernard, Andrew B., and Andreas Moxnes. "Networks and trade." *Annual Review of Economics* 10 (2018): 65-85.

Wu, Di. "Shock spillover and financial response in supply chain networks: Evidence from firm-level data." *Unpublished working paper* (2016).
https://pdfs.semanticscholar.org/9bf3/9f16bf5aa2f663ff196dfeae6a5a8848af3c.pdf?_ga=2.130953862.869240609.1580312341-1559509627.1576540538

Acemoglu, Daron, Ufuk Akcigit, and William Kerr. "Networks and the macroeconomy: An empirical exploration." *NBER Macroeconomics Annual* 30.1 (2016): 273-335.

Liu, Ernest. "Industrial policies in production networks." *The Quarterly Journal of Economics* 134.4 (2019): 1883-1948.

Huneus, Federico. "Production network dynamics and the propagation of shocks." Working Paper (2018).
https://static1.squarespace.com/static/5bc932127fdbc8476acace36/t/5c2c542c0ebbe85745fc7502/1546409028785/JMP_FHL.pdf

Reischer, Margit. "Finance-thy-neighbor: trade credit origins of aggregate fluctuations." Working Paper (2018). https://margitreischer.files.wordpress.com/2019/11/reischer_tcwp110219_m.pdf

Risk Sharing in the US

Asdruball, P. B. E. Sorensen, and O. Yosha (1996): "Channels of interstate risk sharing: United States 1963-1990," *The Quarterly Journal of Economics*, 1081–1110.

Atkeson, A. and T. Bayoumi (1993): "Do private capital markets insure regional risk? Evidence from the United States and Europe," *Open Economies Review*, 4, 303–324.

Kalemli-Ozcan, S. B.E. Sorensen, and O. Yosha (2003): "Risk sharing and industrial specialization: Regional and international evidence," *The American Economic Review*, 93, 903–918.

Luistig, H. and S. Van Nieuwerburgh (2010): "How much does household collateral constrain regional risk sharing?" *Review of Economic Dynamics*, 13, 265–294

Lecture 6: Building from Below: Identifying Real Underlying Obstacles (3/12)

*Paulson, Anna, Townsend, Robert and Karaivanov, Alexander, (2006), Distinguishing Limited Liability from Moral Hazard in a Model of Entrepreneurship, *Journal of Political Economy*, 114, issue 1, p. 100-144.

*"Dynamic Financial Constraints: Distinguishing Mechanism Design from Exogenously Incomplete Regimes." Alexander Karaivanov and Robert M. Townsend. *Econometrica*, 82 (3) 2014: 887–959.

"Using Repayment Data to Test Across Models of Joint Liability Lending." Christian Ahlin and Robert M. Townsend. *Economic Journal* 117(517), March 2007: F11-F51.B63

In advanced economies...

Karaivanov, A., Saurina, J. and Townsend, R. M. (2018), Family Firms, Bank Relationships, and Financial Constraints: A Comprehensive Score Card. *International Economic Review*. doi:10.1111/iere.12362

Attanasio, O. P. and Pavoni, N. (2011), Risk Sharing in Private Information Models With Asset Accumulation: Explaining the Excess Smoothness of Consumption. *Econometrica*, 79: 1027-1068. doi:10.3982/ECTA7063

Nikolov, Boris, Lukas Schmid, and Roberto Steri. "The Sources of Financing Constraints." Swiss Finance Institute Research Paper 18-74 (2018). https://faculty.fuqua.duke.edu/~ls111/NSS_FC.pdf

Limited Commitment as an Obstacle

Thomas, J. & Worrall, T., 1988. Self-Enforcing Wage Contracts. *The Review of Economic Studies*, 55(4), pp.541–553. •

Kocherlakota, N.R., 1996. Implications of Efficient Risk Sharing without Commitment. *The Review of Economic Studies*, 63(4), pp.595 –609. •

Ligon, E., Thomas, J.P. & Worrall, T., 2002. Informal Insurance Arrangements with Limited Commitment: Theory and Evidence from Village Economies. *The Review of Economic Studies*, 69(1), pp.209–244.

Morton, Melanie (2017), Temporary Migration and Endogenous Risk Sharing in Village India, Forthcoming *Journal of Political Economy*, http://stanford.edu/~memorten/ewExternalFiles/Morten_IndiaMig.pdf

Krueger, Dirk, and Fabrizio Perri (2010), Public versus Private Risk Sharing, *Journal of Economic Theory*, 2010, 146 (3), <https://www.sciencedirect.com/science/article/pii/S002205311>

Krueger, Dirk, and Fabrizio Perri (2006), Does Income Inequality Lead to Consumption Inequality? Evidence and Theory.

Lecture 7: Where Structure is Needed, or Not: Imperfect Competition and Finance (3/31)

*Joaquim, Gustavo, Robert Townsend, and Victor Zhorin. "Optimal Contracting and Spatial Competition Among Financial Service Providers." Working Paper (2019). <https://economics.mit.edu/files/18094>

Assuncao, Juliano, Sergey Mityakov, and Robert M. Townsend. "Public Ownership and Anti-Preemption." Working Paper, 2018.
http://robertmtownsend.net/sites/default/files/files/papers/working_papers/AMT_AER1.pdf

Gao, Haoyu, et al. "Rise of bank competition: Evidence from banking deregulation in china." No. w25795. National Bureau of Economic Research, 2019.

Related literatures and in other countries

Einav, Liran, Amy Finkelstein, Stephen P. Ryan, Paul Schrimpf, and Mark R. Cullen. 2013. "Selection on Moral Hazard in Health Insurance." *American Economic Review*, 103 (1): 178-219.

Handel, Ben, Igal Hendel, and Michael Whinston. 2017. "The Welfare Effects of Longterm Health Insurance Contracts" NBER Working Paper No. 23624.

Lester, Benjamin, et al. "Screening and adverse selection in frictional markets." *Journal of Political Economy* 127.1 (2019): 338-377.

And in Macro...

Joaquim, Gustavo and Bernardus van Doornik. "Bank Competition, Cost of Credit, and Economic Activity: Evidence from Brazil." Working Paper (2019). <https://economics.mit.edu/files/18275>

Herreño, Juan. "The Aggregate Effects of Bank Lending Cuts." Working Paper (2019). https://4cfc4c37-9f92-451a-a7ce-dafa24671456.filesusr.com/ugd/164c01_ca621e2782eb46f8b47eae5b1e98c458.pdf

Lecture 8: Multiple Obstacles in Economy-Wide Models: Realistic vs Ad Hoc, with Policy Implications (4/2)

*Moll, Benjamin, Robert M. Townsend, and Victor Zhorin. "Economic development, flow of funds, and the equilibrium interaction of financial frictions." *Proceedings of the National Academy of Sciences* 114.24 (2017): 6176-6184.

*Era Dabla-Norris & Yan Ji & Robert M. Townsend & D. Filiz Unsal, 2015. "Distinguishing Constraints on Financial Inclusion and Their Impact on GDP, TFP, and Inequality," NBER Working Papers 20821, National Bureau of Economic Research, Inc.

Flow of Funds Within and Across Countries

Cole, H. L., Greenwood, J. and Sanchez, J. M. (2016), Why Doesn't Technology Flow From Rich to Poor Countries? *Econometrica*, 84: 1477-1521. doi:10.3982/ECTA11150

Lecture 9: Life Cycle Models and Data; Behavior and RCT Interventions; With Insurance Limits, Credit Constraints and Transaction Costs for Liquidity, Life Cycle as Basis for Models of Growth and Inequality (4/7)

“Extraordinary Financial Lives of Ordinary People,” Chapters 3 and 4, case studies, life cycle planner

"Households as Corporate Firms: An Analysis of Household Finance Using Integrated Household Surveys and Corporate Financial Accounting." Krislert Samphantharak and Robert M. Townsend. Econometric Society Monograph Series No. 46, December 2009.

Life Cycle Models With Limited Insurance

*"Risk-taking over the Life Cycle: Aggregate and Distributive Implications of Entrepreneurial Risk" Dejanir H. Silva and Robert M. Townsend. Working Paper, 2018.

With Credit Constraints

"Human Capital Acquisition and Occupational Choice: Implications for Economic Development". Marti Mestieri, Johanna Schauer and Robert M. Townsend, Review of Economic Dynamics, 25, 2017: 151–186.

With Transaction Costs and Liquidity Constraints • Kaplan, G. and Violante, G. L. (2014), A Model of the Consumption Response to Fiscal Stimulus Payments. Econometrica, 82: 1199-1239.
doi:10.3982/ECTA10528

Kaplan, Greg, Giovanni L. Violante, and Justin Weidner (2014). The Wealthy Hand to Mouth. Brookings Papers on Economic Activity, Spring 2014

Student Presentations (4/9)

Guest Lecture: Martin Beraja (4/14)

* Adão, Rodrigo, Martin Beraja, and Nitya Pandalai-Nayar. “Technological Transitions with Skill Heterogeneity Across Generations.” Working Paper, 2020. <https://economics.mit.edu/files/17947>

Student Presentations (4/16)