

CERGE-EI

Center for Economic Research and Graduate Education
and the Economics Institute of the Czech Academy of Sciences

Academic Year 2020–2021 Course Book Spring Semester

Study Affairs Office
Prague, February 2021

The print version of this Course Book is subject to updates. Any updates will be available at <https://www.cerge-ei.cz/sao-internal/phd-students>

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1 The structure of studies in economics at CERGE-EI

Study Program

These courses are designed for the preparatory semester and the first and second year of study. One lecture/exercise unit is 45 minutes.

Preparatory semester

Subject	(Lecture hours / exercise hours)
One lecture/ exercise unit is 45 minutes long. 4/2 refers to 4 units of lecture and 2 units of exercise sessions pre week.	
Macroeconomics 0	4/2, Exam
Microeconomics 0	4/2, Exam
Mathematics	4/2, Exam

First year

Subject	Fall	Spring	Summer
One lecture/ exercise unit is 45 minutes long. 4/2 refers to 4 units of lecture and 2 units of exercise sessions pre week.			
Macroeconomics I, II, III	4/2, Exam	4/2, Exam	4/2, Exam
Microeconomics I, II, III	4/2, Exam	4/2, Exam	4/2, Exam
Statistics/Econometrics I, II	4/2, Exam	4/2, Exam	4/2, Exam
Academic Writing I (PhD students)	---	4/0 Credit	---
Research Writing I (MAER students)	---	4/0 Credit	---

Notes: After completing the first-year courses, students must pass General examinations in Macroeconomics, Microeconomics and Econometrics.

Second Year

Subject	Fall	Spring	Summer
One lecture/ exercise unit is 45 minutes long. 4/2 refers to 4 units of lecture and 2 units of exercise sessions pre week.			
Development Economics	4/2, Exam	---	---
Experimental Economics	---	4/2, Exam	---
Economic Development and Institutions	4/2, Exam	---	---
Quantitative Economic History	---	4/2, Exam	---
Microeconometrics	---	4/2, Exam	---
Labor Economics I, II	4/2, Exam	4/2, Exam	---
Macro Topics I, II	4/2, Exam	4/2, Exam	---
Public Finance	4/2, Exam	---	---
Political Economy	---	4/2, Exam	---
Time Series Econometrics	4/2, Exam	---	---
Financial Econometrics	---	4/2, Exam	---
Academic Writing II / Research Writing II	4/0, Credit	---	---
Research Methodology Seminar	Mandatory	Mandatory	0/2, Credit
Combined Skills I	---	4/0, Credit	---
Research Seminars	0/2, Credit	0/2, Credit	---
Combined Skills II - M.A.	---	---	0/2, Credit

Notes:

* *Second-year students must choose at least three courses from different fields with final exams per semester. Courses offered may*

differ slightly from year to year, depending on the faculty members in residence.

* Credits for Academic Skills Center courses, the Research Seminars and Directed Research are mandatory.

* Credit for the Research Methodology Seminar is awarded based on individual consultations with the instructors and individual written work.

* After completing the second year, each student must pass General exams in two fields.

* Combined Skills 11 - M.A. is for M.A. students only, who must produce a paper that fulfills the MA-degree writing requirement.

Third year

Subject	Fall	Spring	Summer
Combined Skills 11 - Ph.D.	Credit	---	---

Notes: Students must pass the two-year program as a pre-requisite to registration in CS 11-Ph.D.

2 Spring semester course syllabi

A. First year courses

MACROECONOMICS II

Lecturer:

Ctirad Slavík

(ctirad.sklavik@cerge-ei.cz; office 323, phone 188)

Teaching assistant:

Jan Žemlička

(jan.zemlicka@cerge-ei.cz)

Office hours:

Wednesday, Thursday 10:00-11:00

Course information

This course will be an introduction to the techniques and the applications of dynamic general equilibrium models. In the first part of the course we will cover basic methods of solving dynamic models, including dynamic programming. This course will apply the techniques of dynamic general equilibrium models to the analysis of labor markets.

Course outline

1. Neoclassical Growth Model

Robert King and Sergio Rebelo. “*Transitional Dynamics and Economic Growth in the Neoclassical Model*,” *The American Economic Review*, 83(4): 908–931, 1993.

Timothy J. Kehoe and Edward C. Prescott (2002). „*Great Depressions of the Twentieth Century*,” *Review of Economic Dynamics*, 5:1–18.

Kaiji Chen, Ayse Imrohoroglu, and Selahattin Imrohoroglu. „*The Japanese Saving Rate*.” *American Economic Review*, 96(5): 1850–1858, 2006.

Per Krusell, Lee Ohanian, Victor Ríos-Rull and Gianluca Violante. „*Capital-Skill Complementarity and Inequality: A Macroeconomic Analysis*,” *Econometrica*, 68: 1029–1054, 2000.

Loukas Karabarbounis and Brent Neiman. „*The global decline of the labor share*,” *The Quarterly Journal of Economics* 129: 61–103, 2014.

Charles Jones. „*Pareto and Piketty: The Macroeconomics of Top Income and Wealth Inequality*,” *Journal of Economic Perspectives*, 29: 29-46, 2015.

1. Labor Search

Richard Rogerson, Robert Shimer, and Randall Wright. “*Search-theoretic models of the labor market - a survey*,” National Bureau of Economic Research, 2004.

Kenneth Burdett, and Dale T. Mortensen. “*Wage differentials, employer size, and unemployment*,” *International Economic Review*, 257-273, 1998.

Robert Shimer. “*The Cyclical Behavior of Equilibrium Unemployment and Vacancies*,” *American Economic Review*, 25-49, 2005.

Marcus Hagedorn and Iurii Manovskii. “*The Cyclical Behavior of Equilibrium Unemployment and Vacancies Revisited*,” *American Economic Review*, 1692-1706, 2008.

Requirements and grading

Grades will be based on four problem sets (40% of the grade for my part of the course), and a midterm exam (60% of the grade for my part of the course). There is no make-up for the midterm exam. Basic knowledge of Julia will be required to solve some of the problem sets.

Copying someone else’s problem set solution (either in part or in full) will result in zero points for the whole problem set. Doing so repeatedly or cheating on the midterm exam action will result in an F grade in this course.

Readings

The following books will be useful throughout the whole first year macroeconomics sequence.

(SLP) Nancy L. Stokey, Robert E. Lucas, Jr., and Edward C. Prescott. *Recursive Methods in Economic Dynamics*, Cambridge: Harvard University Press, 1989.

(LS) Lars Ljungqvist and Thomas J. Sargent. *Recursive Macroeconomic Theory*, The MIT Press, Cambridge, Massachusetts, 4th edition, 2018.

(SS) Thomas J. Sargent and John Stachurski. *Quantitative Macroeconomics*. <https://lectures.quantecon.org>. This online source is useful for the computational aspects of the course, especially if you are using Julia or Python.

ECONOMETRICS I

Lecturer:

Stanislav Anatolyev

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Teaching assistants:

Sinara Gharibyan

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Vladimir Pyrlik

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Office hours:

by appointment in Zoom

Course description

The course presents technical aspects of modern econometric estimation and inference, applied in both cross-sectional and time-series settings. After reviewing important econometric notions and asymptotic inference tools, we concentrate on parametric regression models, including linear and nonlinear. Then we turn to methods applied to non-regression settings, including maximum likelihood and method of moments estimation. Finally, we will study methods of bootstrap inference. Home assignments serve as an important ingredient in the learning process.

Course outline

- ✓ *Deterministic dynamic optimization problems.*
 - a. Canonical model.
 - b. Efficient Allocations.
 - i. Sequence Approach.
 - ii. Function Space and Dynamic Programming.
 - c. Properties of Solutions.
 - d. Numerical Methods.

- ✓ *Equilibrium Concepts.*
 - a. No Uncertainty.
 - i. Sequence concepts:
 - A. Date 0 Arrow-Debreu.
 - B. Sequence-of-Markets.
 - ii. Recursive Competitive Equilibrium.
 - b. Adding Uncertainty.

- ✓ *Application: Growth Theory.*
 - a. Exogenous Growth.
 - b. Endogenous Growth.
 - c. Overlapping Generations.

- ✓ *Asset Pricing and Risk Sharing.*
- ✓ *Introducing Financial Frictions (if time permits).*

Requirements and grading

The grades will be determined as follows: homeworks 10%; final 90%.

Readings

The textbooks for the course are:

Stokey, Nancy L., Robert E. Lucas, Jr., and Edward C. Prescott: Recursive Methods in Economic Dynamics. Cambridge: Harvard University Press, 1989.

Ljungquist, Lars and Thomas J. Sargent: Recursive Macroeconomic Theory. Second Edition. MIT Press. 2004.

Additional reading materials and the related readings will be made available later.

MICROECONOMICS I

Lecturer:

Avner Shaked

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Krešimir Žigić

(kresimir.zigic@cerge-ei.cz, office 306, phone 245)

Teaching assistants:

Vladimir Pyrlik

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Artem Razumovskii

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Office hours:

see the office door

Course information

This is the first course in the microeconomics sequence. The objective of the sequence in general and of the course in particular is to i) provide students with firm knowledge of the basic microeconomic theory, ii) provide students with grasp of relevant (micro)economic concepts on intuitive and formal level and iii) equip students with tools and techniques allowing them to conduct their own independent research.

The course is based on lectures and exercise sessions. Two lectures and one class take place in any given week.

Problem sets are integral part of the course. Students are required to complete problem sets and hand it in before the class (details to be specified). The classes might be devoted to the discussion of problem set solutions. Team-work on the problem sets is encouraged. Free-riding on the effort of team-mates is not. Work on the problem sets is essential for grasping the course material and for exam preparation.

Course outline

1. Consumption

- ✓ Consumer's Preference and Choice
- ✓ Revealed Preference
- ✓ Consumer's Surplus and Aggregated Demand
- ✓ Intertemporal Choice
- ✓ Uncertainty and risk

2. Production

- ✓ Production

3. Markets

- ✓ Competitive Markets
- ✓ Public Goods
- ✓ Externalities
- ✓ Exchange, Matching, Edgeworth Box
- ✓ General Equilibrium

If there's time left:

Behavioral Economics
Discriminating Monopolist

Requirements and grading

Grades will be based on final exam only. The final exam will take place in week 13 (details to be specified). There will be midterm exam in week 6 or 7 (details to be specified) with structure similar to the final exam and hence indicative of students' standing in the course. In addition, students are required to hand problem sets. The main books used in the course will be Osborne & Rubinstein's and MasColell's (nos. 1&2 in the list below).

Readings

Osborne, Martin J. and Ariel Rubinstein. **Models in Microeconomic Theory**, Open Book Publishers, 2020.

Mas-Colell, Andreu; Michael D. Whinston and Jerry R. Green. **Microeconomic Theory**. Oxford University Press, 1995.

Varian, Hal R. **Intermediate Microeconomics**, W.W. Norton, 2014.

Starr, Ross M. **General Equilibrium Theory, An Introduction**, CUP, 1997.

Simon, Carl P. and Lawrence Blume. **Mathematics for Economists**. W. W. Norton, 1984.

STATISTICS

Lecturer:

Paolo Zacchia

(paolo.zacchia@cerge-ei.cz, office 318, phone 174)

Teaching assistants:

Michal Hakala

(michal.hakala@cerge-ei.cz)

Arsenii Shcherbov

(arseniy.scherbov@cerge-ei.cz)

Office hours:

by appointment

Course information

This is a graduate level introductory course in mathematical probability and statistics: its objective is to provide students with key conceptual tools that are necessary for additional training in econometrics and microeconomics. Beginning from basic axiomatic definitions of probability, the course introduces univariate and multivariate probability distributions, samples and statistics, concepts of estimation and inference, some key asymptotic results, and it concludes with an introduction to linear projections and regression, whose properties are emphasized in preparation for further coursework in econometrics.

Course outline

- Events and probabilities
 - Axiomatic definition of probability
 - Conditional probability, independence and Bayes' Rule
 - Random variables and univariate distribution functions
 - Functions and transformation of random variables
 - Moments and moment generating functions

- Univariate probability distributions
 - Discrete distributions: Bernoulli, binomial, negative binomial, (hyper)geometric, Poisson
 - Continuous distributions I: normal, lognormal, logistic, Cauchy, Laplace
 - Continuous distributions II: Beta, Gamma and their special cases, F , Student's t , Pareto
 - Continuous distributions III: extreme values: Gumbel, Fréchet and (reverse) Weibull

- Multivariate probability distributions
 - Random vectors, joint distributions, marginal distributions, transformations
 - Independence of random variables and vectors, random products and random ratios
 - Moments of random vectors, covariance, correlation
 - Multivariate moment generation, sum of independent random variables
 - Conditional distributions and moments, Law of Iterated Expectations, Law of Total Variance
 - Key multivariate distributions: multinomial, multivariate normal

- Samples and sample statistics
 - Samples, random samples and their properties
 - Sampling from the univariate and multivariate normal distributions
 - Order statistics and some key associated results
 - The sufficiency principle and sufficient statistics

- Estimation and Inference

- Point estimation: the analogy principle and the method of moments
- Point estimation: the likelihood principle and maximum likelihood estimation
- Evaluating estimators: loss functions, unbiasedness, consistency, the Cramér-Rao bound
- Inference: tests of hypotheses, and analysis of selected exact results
- Inference: interval estimation and analysis of selected exact results

- Introduction to asymptotic theory
 - Random sequences, convergence in probability, almost sure convergence
 - Properties of convergent sequences, Laws of Large Numbers, and implications for estimation
 - Convergence in distribution, Slutsky's Theorem, and the Cramér-Wold device
 - Central Limit Theorems, the Delta Method, and implications for estimation

- Linear Projections and Regression
 - Linear socio-economic relationships: some classical examples
 - Linear predictors, linear projections and conditional expectation
 - The least squares estimator: derivation and algebraic properties
 - Introduction to the linear regression model, dummy variables

Mathematical prerequisites

It is expected that students possess a solid command of univariate and multivariate calculus, as well as a basic training in linear algebra.

Requirements and grading

The final evaluation for this course is determined as follows: a midterm exam accounts for 30% of the grade; a final exam counts for 50%, while the remaining 20% is based on the performance in regular assignments, with an approximately biweekly expected cadence.

Readings

Main material: class notes prepared by the lecturer and made available to students.

George Casella and Roger L. Berger (2001), *Statistical Inference*, Duxbury Press.

Bruce E. Hansen (2019), *Econometrics*, working draft available online on the author's website.

B. Second year courses

DEVELOPMENT ECONOMICS

Lecturer:

Andreas Menzel

(andreas.menzel@cerge-ei.cz, office 330, phone 211)

Teaching assistant:

TBA

Office hours:

TBA

Preliminary: Some minor changes likely in final syllabus provided at beginning of course!

Course information

The goal of this course is to expose you to the research frontier in applied microeconomic research in development economics, particular empirical and policy oriented research, and research that involves field experiments. After taking this course, you should be able to identify promising research questions, and know methodological challenges and best practices in this field.

Requirement and grading

Evaluation of this course will be based on a term paper (40%), in which you identify a research question and propose a data-collection and an identification strategy to answer the question, two paper presentations (each ca. 20 minutes - each 15%), one assignment in which you replicate the results of a paper (20%), and brief summaries of one paper that a fellow course participant will present each week, starting from week 3 (max ½ page – 10%).

Course introduction and readings

The following book provides a helpful overview and introduction to the topic:
Banerjee, Abhijit, and Esther Duflo. 2011: *Poor Economics*.

The needed econometrics can be read up in:

Angrist, Josh, and Joern-Steffen Pischke. 2009: *Mostly Harmless Econometrics*.

Imbens, Guido, and Jeffrey Wooldridge. 2009: *Recent Developments in the Econometrics of Program Evaluation*, *Journal of Economic Literature* 47 (1): 5-86.

Imbens, Guido, and Susan Athey. 2017: *The Econometrics of Randomized Experiments*, A. Banerjee and E. Duflo (eds.), *Handbook of Economic Field Experiments* Vol. 1.

Bruhn, Melanie, and David McKenzie. 2009: *In Pursuit of Balance: Randomization in Practice in Development Field Experiments*,” *AEJ: Applied Economics* 1 (4): 200-232.

A practical introduction into the methodology of Randomized Controlled Trials that will be referenced a few times is:

Glennester, Rachel, and Kudzai Takavarasha. 2013: *Running Randomized Evaluations: A Practical Guide*, Princeton Press.

The following link and book is great for setting the frame for the phenomena we study, for those who wish to immerse themselves deeper in the topic:

www.gapminder.org/dollar-street/?topic=families

Hartmann, Betsy, and Kames K. Boyce. 2013: *A Quiet Violence: View from A Bangladeshi Village*.

* indicates required reading

(R) indicates articles that will be presented by students (and summarised by other students each week). From the viewpoint of examinations, these papers are *required reading too*.

Week 1: Introduction

Banerjee, Abhijit, and Esther Duflo. 2007: *The Economic Lives of the Poor*, *Journal of Economic Perspectives* 21(1): 141-168 *

Banerjee, Abhijit, and Esther Duflo. 2008: *What is Middle Class about the Middle Classes around the World?*, *Journal of Economic Perspectives* 22 (2): 3-28

Dollar, David, Tatjana Kleineberg, and Art Kraay. 2016: *Growth still is good for the Poor*, *European Economic Review* 81: 68-85

Ravallion, Martin. 2005: Inequality is Bad for the Poor, World Bank Policy Research Working Paper 3677

Mankiw, N. Gregory, David Romer, and David N. Weil. 1992: A Contribution to the Empirics of Economic Growth, *Quarterly Journal of Economics* 107 (2): 407-437*

Caselli, Francesco. 2005: Accounting for Cross-Country Income Differences, Chapter 9 in *Handbook of Economic Growth* Vol. 1, Part A: 679-741

Caselli, Francesco. 2016: Accounting for Cross-Country Income Differences: Ten Years Later, *World Development Report Background Paper, Governance and the Law*

Week 2: Poverty Traps

Bandiera, Oriana, Robin Burgess, Narayan Das, Selim Gulesci, Imran Rasul, and Munshi Sulaiman. 2017: Labor Markets and Poverty in Village Economies, *Quarterly Journal of Economics* 132(2): 811-870 *

Balboni, Clare, Oriana Bandiera, Robin Burgess, Maitreesh Ghatak and Anton Heil. 2019: *Why do people stay poor?*, Working Paper, LSE *

Rodrik, Dani. 2013: Unconditional Convergence in Manufacturing, *Quarterly Journal of Economics* 128 (1): 165-204

Kraay, Art, and David McKenzie. 2014: Do Poverty Traps Exist? Assessing the Evidence, *Journal of Economic Perspectives* 28 (3): 127-148

Haushofer, Johannes. 2019: Is there a Psychological Poverty Trap?, Working Paper, Princeton

Banerjee, Abhijit, Esther Duflo, Nathanael Goldberg, Dean Karlan, Robert Osei, William Parienté, Jeremy Shapiro, Bram Thuysbaert, and Christopher Udry. (2015.c): A multifaceted program causes lasting progress for the very poor: Evidence from six countries, *Science* 348 (6236): 772

Week 3: Microfinance

DeMel, Suresh, David McKenzie, and Christopher Woodruff. 2008: Returns to Capital in Microenterprises: Evidence from a Field Experiment, *Quarterly Journal of Economics* 123 (4): 1329-1372 *

Keniston, Daniel. 2011: Experimental vs. Structural Estimates of the Return to Capital in Microenterprises, Working Paper, Yale

Banerjee, Abhijit, Esther Duflo, Rachel Glennester, and Cynthia Kinnan. 2015: The Miracle of Microfinance? Evidence from a Randomized Evaluation, *AEJ: Applied Economics* 7 (1): 22-53 *

Banerjee, Abhijit., Dean Karlan, and Jonathan Zinman. 2015.b: Six randomized evaluations of microcredit: Introduction and further steps, *AEJ: Applied Economics*. 7 (1): 1-21

Meager, Rachel. 2019: Understanding the Average Impact of Microcredit Expansions: A Bayesian Hierarchical Analysis of Seven Randomized Experiments, *AEJ: Applied Economics* 11 (1): 57-91

Augsburg, Britta, Ralph De Haas, Heike Harmgart, and Costas Meghir. 2015. "The Impacts of Microcredit: Evidence from Bosnia and Herzegovina." *American Economic Journal: Applied Economics* 7 (1): 183–203. (R)

Gine, Xavier, Karuna Krishnaswamy, and Alejandro Ponce. 2013: Strategic Default in Joint Liability Groups: Evidence from a Natural Experiment in India, Unpublished (R)

Field, Erica, Rohini Pande, John Papp, and Natalia Rigol. 2013: Does the classic microfinance model discourage entrepreneurship among the poor? Experimental evidence from India", *AEJ: Applied Economics*. 103 (6): 2196–2226 (R)

Week 4: Credit Markets and Property Rights

Karlan, Dean, and Jonathan Zinman. 2009: Observing Unobservables: Identifying Information Asymmetries with a Consumer Credit Field Experiment, *Econometrica* 77 (6): 1993-2008 *

Bryan, Gharad, Dean Karlan, and Jonathan Zinman. 2015: Referrals: Peer Screening and Enforcement in a Consumer Credit Field Experiment, *AEJ: Microeconomics* 7 (3): 174-204

Gine, Xavier, and Dean Karlan. 2014: Group versus individual liability: Short and long term evidence from Philippine microcredit lending groups, *Journal of Development Economics* 107: 65-83 *

Rutherford, Stuart, and Sukhwinder Arora. 2009: *The Poor and Their Money*, Practical Action Publishing, UK

Dupas, Pascaline, and Jonathan Robinson. 2013: Savings Constraints and Microenterprise Development: Evidence from a Field Experiment in Kenya. *American Economic Journal: Applied Economics*, 5 (1): 163-92.

Afzal, Uzma, Giovanna d'Adda, Marcel Fafchamps, Simon Quinn, and Farah Said. 2018: **Two Sides of the Same Rupee? Comparing Demand for Microcredit and Microsaving in a Framed Field Experiment in Rural Pakistan**, *Economic Journal* 128 (614): 2161-2190

Haushofer, Johannes, Matthieu Chemin, Channing Jang, and Justin Abraham. 2019: Economic and Psychological Effects of Health Insurance and Cash Transfers: Evidence from a Randomized Experiment in Kenya, Working Paper, Princeton

De Mel, Suresh, David McKenzie, and Christopher Woodruff. 2019: Micro-Equity for Microenterprises, World Bank Policy Research Working Paper 8799

Karlan, Dean, Robert Osei, Isaac Osei-Akoto, and Christopher Udry. 2014: Agricultural Decisions after Relaxing Credit and Risk Constraints, Quarterly Journal of Economics 129 (2): 597-652 (R)

De Janvry, Alain, Kyle Emerick, Marco Gonzalez-Navarro, and Elisabeth Sadoulet. 2015: Delinking Land Rights from Land Use: Certification and Migration in Mexico, *American Economic Review* 105 (10): 3125-3149 (R)

Banerjee, Abhijit, and Esther Duflo. 2014: Do Firms Want to Borrow More? Testing Credit Constraints, *Review of Economic Studies* 81 (2): 572-607 (R)

Week 5: Schooling

Muralidharan, Khartik. 2017: Field Experiments in Education in Developing Countries, in *Handbook of Field Experiments* Vol 2, Eds. A. Banerjee and E. Duflo, Elsevier

Duflo, Esther. 2001: Schooling and Labor Market Consequences School Construction in Indonesia, *American Economic Review* 91 (4): 795-813 *

Schultz, T. Paul. 2004: School subsidies for the poor: Evaluating the Mexican Progresa Poverty Program, *Journal of Development Economics*, 74 (1): 199-250

Baird, Sarah, Craig McIntosh, and Berk Özler. 2011: Cash or Condition? Evidence from a Randomized Cash Transfer Program, *Quarterly Journal of Economics* 126 (4): 1709-1753.

Benhassine, Najy, Florencia Devoto, Esther Duflo, Pascaline Dupas, and Victor Pouliquen. 2015: Turning a Shove into a Nudge? A "Labeled Cash Transfer" for Education, *American Economic Journal: Economic Policy*, 7 (3): 86-125.

Prashant Bharadwaj, Leah K Lakdawala, Nicholas Li (2020): Perverse Consequences of Well Intentioned Regulation: Evidence from India's Child Labor Ban, *Journal of the European Economic Association* 18 (3): 1158–1195

Heath, Rachel, and A. Mushfiq Mobarak. 2015: Manufacturing growth and the lives of Bangladeshi women, *Journal of Development Economics*, 115: 1-15

Romero, Mauricio, Justin Sandefur, and Wayne Aaron Sandholtz. *Forthcoming*: Outsourcing Education: Experimental Evidence from Liberia *

Atkin, David. 2016: Endogenous Skill Acquisition and Export Manufacturing in Mexico, *American Economic Review*, 106 (8): 2046-85. (R)

Almeida, Rita, Sarojini Hirschleifer, David McKenzie, and Cristobal Ridao-Cano. 2016: The Impact of Vocational Training for the Unemployed: Experimental Evidence from Turkey, *Economic Journal*, 126(597): 2115-2146. (R)

Muralidharan, Karthik, Abhijeet Singh, and Alejandro J. Ganimian. 2019: Disrupting Education? Experimental Evidence on Technology-Aided Instruction in India, *American Economic Review* 109 (4): 1426-1460. (R)

Week 6: Health

Dupas, Pascaline, and Edward Miguel. 2017: Impacts and Determinants of Health Levels in Low-Income Countries, in *Handbook of Field Experiments* Vol 2, Eds. A. Banerjee and E. Duflo, Elsevier

Kremer, Michael, and Edward Miguel. 2004: Worms: Identifying Impacts on Education and Health in the Presence of Treatment Externalities, *Econometrica* 72 (1), 159-217

Baird, Sarah, Joan Hamory Hicks, Michael Kremer, and Edward Miguel. 2016: Worms at Work: Long-run Impacts of a Child Health Investment, *Quarterly Journal of Economics* 131 (4): 1637-1680 *

Ozier, Owen. 2018: Exploiting Externalities to Estimate the Long-Term Effects of Early Childhood Deworming, *AEJ: Applied Economics* 10 (3): 235-262

Davey, Calum, Alexander M. Aiken, Richard J. Hayes, James R. Hargreaves. 2015: Re-analysis of health and educational impacts of a school-based deworming programme in western Kenya: a statistical replication of a cluster quasi-randomized stepped-wedge trial, *International Journal of Epidemiology* 44 (5): 1581–1592

Jullien, Sophie, David Sinclair, and Paul Garner. 2017: The impact of mass deworming programmes on schooling and economic development: an appraisal of long-term studies, *International Journal of Epidemiology* 45 (6): 2140-2153 *

Baird, Sarah, Joan Hamory Hicks, Michael Kremer and Edward Miguel. 2017: Commentary: Assessing long-run deworming impacts on education and economic outcomes: a comment on Jullien, Sinclair and Garner (2016), *International Journal of Epidemiology* 45 (6): 2140-2153

Duflo, Esther, Abhijit Banerjee, Amy Finkelstein, Lawrence Katz, Benjamin Olken, and Anja Sautmann. 2020: In Praise of Moderation: Suggestions for the Scope and Use of Pre-Analysis Plans for RCTs in Economics. NBER Working Paper No. 26993

Field, Erica, Omar Robles, and Maximo Torero. 2009: Iodine Deficiency and Schooling Attainment in Tanzania, *AEJ: Applied Economics* 1 (4): 140-69 *

Bleakley, Hoyt. 2010: Malaria Eradication in the Americas: A Retrospective Analysis of Childhood Exposure. *American Economic Journal: Applied Economics*, 2 (2): 1-45.

Lucas, Adrienne M. 2010. "Malaria Eradication and Educational Attainment: Evidence from Paraguay and Sri Lanka." *American Economic Journal: Applied Economics*, 2 (2): 46-71.

Alix Peterson Zwane, Jonathan Zinman, Eric Van Dusen, William Pariente, Clair Null, Edward Miguel, Michael Kremer, Dean S. Karlan, Richard Hornbeck, Xavier Giné, Esther Duflo, Florencia Devoto, Bruno Crepon, and Abhijit Banerjee. 2011: Being surveyed can change later behavior and related parameter estimates, *PNAS* 108 (5): 1821-1826

Week 7: Infrastructure

Asher, Sam, and Paul Novosad. 2019: Rural Roads and Local Economic Development, *American Economics Review*, forthcoming *

Adukia, Anjali, Sam Asher, and Paul Novosad. *forthcoming*: Educational Investment Responses to Economic Opportunity: Evidence from Indian Road Construction, *AJ: Applied Economics*

Ghani, Ejaz, Arti Grover Goswami, and William R. Kerr. 2016: Highway to Success: The Impact of the Golden Quadrilateral Project for the Location and Performance of Indian Manufacturing, *Economic Journal* 126 (591): 317-357

Anderson, Michael L. 2008: Multiple Inference and Gender Differences in the Effects of Early Intervention: A Reevaluation of the Abecedarian, Perry Preschool, and Early Training Projects, *Journal of the American Statistical Association* 103 (484): 1481–1495.*

Kenneth Lee, Edward Miguel, and Catherine Wolfram Year. 2019: Experimental Evidence on the Economics of Rural Electrification, Working Paper, Berkeley *

Imbens, Guido. 2018: Optimal Bandwidth Choice for the Regression Discontinuity Estimator, *Review of Economic Studies* 79: 933–959.

Dinkelman, Taryn. 2011. The Effects of Rural Electrification on Employment: New Evidence from South Africa, *American Economic Review*, 101 (7): 3078-3108. (R)

Jensen, Robert. 2007: The Digital Divide: Information (Technology), Market Performance, and Welfare in the South Indian Fisheries Sector, *Quarterly Journal of Economics* 122 (3): 879–924 (R)

Burke, Marshall, Lauren Falcao Bergquist, and Edward Miguel. 2019: Sell Low and Buy High: Arbitrage and Local Price Effects in Kenyan Markets, *Quarterly Journal of Economics* 134 (2): 785-842 (R)

Week 8: Small Firms

McKenzie, David. 2017. "Identifying and Spurring High-Growth Entrepreneurship: Experimental Evidence from a Business Plan Competition." *American Economic Review*, 107 (8): 2278-2307. *

Ghanem, Dalia, Sarojini Hirschleifer, and Karen Ortiz-Becerra. 2019: Testing Attrition Bias in Field Experiments, Working Paper, UC Davis

Millan, Teresa Molina, and Karen Macours. 2019. "Attrition in Randomized Control Trials: Using Tracking Information to Correct Bias." Working Paper, PSE.

Behagel, Luc, Bruno Crepon, Marc Gurgand, and Thomas Le Barbanchon. 2015: Please Call Again: Correcting Nonresponse Bias in Treatment Effect Models, *Review of Economics and Statistics*, 97: 1070–1080.

Lee, David. 2009: Training, Wages, and Sample Selection: Estimating Sharp Bounds on Treatment Effects, *Review of Economic Studies* 76 (3): 1071-1102

de Mel, Suresh, McKenzie, David and Christopher Woodruff. 2013: The Demand for, and Consequences of, Formalization among Informal Firms in Sri Lanka, *AEJ: Applied Economics*, 5 (2): 122-150 *

McKenzie, David . 2018: How Should the Government bring Small firms into the Formal system? Experimental evidence from Malawi, *World Bank Policy Research Working Paper no. 8601*

Keller, Elisa and Caunedo, Julieta, (forthcoming), Capital Obsolescence and Agricultural Productivity, *Quarterly Journal of Economics*.

de Mel, Suresh , McKenzie, David and Christopher Woodruff. 2019: Labor Drops: Experimental Evidence on the Return to Additional Labor in Microenterprises, *AEJ: Applied Economics*, 11 (1): 202-35 (R)

Jensen, Robert, and Nolan H. Miller. 2018. "Market Integration, Demand, and the Growth of Firms: Evidence from a Natural Experiment in India." *American Economic Review*, 108 (12): 3583-3625. (R)

Brooks, Wyatt, Kevin Donovan, and Terrence Johnson. 2018: Mentors or Teachers? Microenterprise Training in Kenya, AEJ Applied Economics 10 (4): 196-221 (R)

Week 9: Large Firms

Chang-Tai Hsieh & Benjamin A. Olken. 2014: The Missing "Missing Middle", *Journal of Economic Perspectives* 28 (3): 89-108

Bloom, Nicholas, Raffaella Sadun, and John Van Reenen. 2012: The organization of firms across countries, *Quarterly Journal of Economics* 127 (4): 1663-1705

Bloom, Nicholas, Benn Eifert, David McKenzie, Aprajit Mahajan, and John Roberts (2013): Does Management Matter? Evidence from India, *Quarterly Journal of Economics* 128 (1), 1-51 *

Bloom, Nicholas, Raffaella Sadun, and John Van Reenen. 2016: Management as a Technology? Working Paper, Stanford

Bandiera, Oriana, Lemos, Renata, Prat, Andrea and Raffaella Sadun. 2018: Managing the Family Firm: Evidence from CEOs at Work, *Review of Financial Studies* 31 (5): 1605-1653.

Khwaja, Asim Ijaz, Atif Mian. 2005: Do Lenders Favor Politically Connected Firms? Rent Provision in an Emerging Financial Market, *Quarterly Journal of Economics* 120 (4): 1371–1411 (R)

Lane, Nathan. 2019: Manufacturing Revolutions: Industrial Policy and Industrialization in South Korea, Working Paper, Monash University (R)

Week 10: Labor Markets and Migration

Blattman, Christopher, and Stefan Dercon. 2018: The Impacts of Industrial and Entrepreneurial Work on Income and Health: Experimental Evidence from Ethiopia, *AEJ: Applied Economics*, 10 (3): 1-38 *

Akram, Agha Ali, Shyamal Chowdhury, and Ahmed Mushfiq Mobarak. 2018: *Effect of Emigration on Rural Labor Markets*, Working Paper, Yale *

Munshi, Kaivan, and Mark Rosenzweig. 2016: Networks and Misallocation: Insurance, Migration, and the Rural-Urban Wage Gap, *American Economic Review*, 106 (1): 46-98.

Kaur, Supreet. 2019: Nominal Wage Rigidity in Village Labor Markets, *American Economic Review*, 109 (10): 3585-3616.

Boudreau, Laura, Rachel Heath, and Tyler McCormick, 2019: *Migrants, Information, and Working Conditions in Bangladeshi Garment Factories*, Working Paper, Columbia University

Clemens, Michael. 2011: Economics and Emigration: Trillion-Dollar Bills on the Sidewalk?, *Journal of Economic Perspectives*, 25(3): 83-106.

Week 11: Gender/Discrimination

Duflo, Esther. 2012. Women Empowerment and Economic Development, *Journal of Economic Literature*, 50 (4): 1051-79.

Bertrand, Marriane, and Esther Duflo. 2017: Field Experiments on Discrimination, in *Handbook of Field Experiments*, Eds. A. Banerjee and E. Duflo, Elsevier

Giuliano, Paola (2020): “Gender and Culture”, Working Paper

Jayachandran, Seema, and Rohini Pande. 2017: Why Are Indian Children So Short? The Role of Birth Order and Son Preference, *American Economic Review*, 107 (9): 2600-2629. *

Dhar, Diva, Tarun Jain, and Seema Jayachandran. 2018: Reshaping Adolescents Gender Attitudes: Evidence from a School-Based Experiment in India, Working Paper, Northwestern University *

Beaman, Lori, Raghavendra Chattopadhyay, Esther Duflo, Rohini Pande, and Petia Topalova. 2009: Powerful Women: Does Exposure Reduce Bias?, *Quarterly Journal of Economics* 124 (4): 1497-1540

Macchiavello, Rocco, Andreas Menzel, Atonu Rabbani, and Christopher Woodruff. 2020: *Challenges of Change: Training Women to Supervise in the Bangladeshi Garment Sector*, Working Paper

Borker, Girija. 2018: Safety First: Perceived Risk of Street Harassment and Educational Choices of Women, Working Paper, Brown University

Week 12: Review

McKenzie, David, (2012), Beyond baseline and follow-up: The case for more T in experiments, *Journal of Development Economics* 99 (2): 210-221

Baird, Sarah, J. Aislinn Bohren, Craig McIntosh, and Berk Ozler. 2018: Optimal Design of Experiments in the Presence of Interference, *The Review of Economics and Statistics* 100 (5): 844–860. *

List, John, A. Shaikh, Y. Xu. 2016: **Multiple Hypothesis Testing in Experimental Economics** NBER Working Paper 21875

Young, Alwyn. 2019: Channeling Fisher: Randomization Tests and the Statistical Insignificance of Seemingly Significant Experimental Results, *Quarterly Journal of Economics* 134 (2): 557-598 *

Glennerster, Rachel. 2016: **The practicalities of running randomized evaluations: partnerships, measurement, ethics, and transparency**, Banerjee, Duflo (Eds.), *Handbook of Development Economics*, Elsevier, North Holland (2016)

Rosenzweig, Mark, and Christopher Udry. 2020: External Validity in a Stochastic World: Evidence from Low-Income Countries, *Review of Economic Studies* 87(1), pp:343-381

ECONOMIC DEVELOPMENT AND INSTITUTIONS

Lecturer:

Vasily Korovkin

(vasily.korovkin@cerge-ei.cz, office 311, phone 167)

Teaching assistant:

TBA

Office hours:

By appointment or after the class

Course page:

TBA

Course information

The goal of this course is to examine the role of institutions and political economy in economic development. We will overview some theoretical contributions to the literature. However, the main focus of the course is on empirical evidence. Specifically, an accent will be made on empirical methods and applying them in your research. The toolbox of causal inference methods will broadly follow “Mostly Harmless Econometrics” by Angrist and Pischke. We will also rely on some more recent methodological contributions. The course will be helpful

for all students whose field of concentration is within applied economics.

Requirements and grading

Class participation & a presentation: you will find the list of required readings in the next section. You can choose readings that have a dagger † next to it for a class presentation. Each person will need to present once, the presenter will need to write an executive summary of a paper, no more than four pages, and everyone else should read it before the class. Both the summary and the presentation should explain what the paper's contribution to the literature is, the primary empirical method used, and the main findings. The presenter should be presenting the paper as his/her research, arguing that the question is important, and the empirical analysis is robust and sufficient. I will ask everyone else to prepare two-slides discussions with *criticism* of the paper and *suggestions for improvement*. I will randomly select a student for a brief discussion after the main presentation.

Home assignments: there will be 3-4 home assignments, covering theoretical concepts from the class, and implementing empirical methods in Stata. You can work in groups of up to two people, but each of you needs to submit a separate electronic copy of the home assignment as pdf to the TA, cc'ing the professor.

Final paper: you will need to develop three research ideas on political economy and development topics. These ideas should have the potential to be converted into a paper. An initial proposal should have three original research questions. You will need to motivate their importance, suggest how you would answer them, and develop the methods to carefully do it (what is the identification strategy?). Each idea should be no more than one page. You will need to develop one of the ideas into a more extended final project, with data work highly recommended to be done by the beginning of the Spring semester.

Outline and readings (preliminary)

The readings marked with † are required for class discussion. The class will cover readings with * in detail. You need to take a quick look at them to follow the lectures. Other readings will be mentioned in the class, but they are optional. However, it is highly encouraged to become familiar with some of them, especially if you are interested in the topic.

1. Motivation for Studying Political Economy and Development Economics. Course Overview. Perfect Experiment and Rubin Causal Model. Methods: Randomized Controlled Trials (RCT)

- ✓ Chapters 1-2 of Angrist and Pischke (2008)*

2. Leaders and Politicians: Local and Federal Level. Good and Bad Politicians. Parties. Methods: OLS, "Observational Methods", Regression Discontinuity (beginning)

- ✓ Jones and Olken (2009)†
- ✓ Chapter 3 of Angrist and Pischke (2008)*, Jones and Olken (2005)*, Beath et al. (2016)*, Martinez-Bravo, Mukherjee, and Stegmann (2017)*, Dal Bó et al. (2017)*, Besley et al. (2005)
- ✓ Chapter 6 of Angrist and Pischke (2008)*, Lee and Lemieux (2010)*, Pettersson-Lindbom (2008)*, Lee, D. S., E. Moretti, and M. J. Butler (2004)*, Dippel (2019)†

3. Voting in Developing Countries. Brief Recap: Median Voter Theorem and Deviations from it. Political Agency. Vote-buying. Methods: RCT in details (stratification, spillovers)

- ✓ Callen and Long (2015)[†]
- ✓ Finan and Schechter (2012)*, Chattopadhyay and Duflo (2004)*, Acemoglu et al. (2014)* (the latter, if time permits)
- ✓ Barro (1973), Pande (2003), Ferraz and Finan (2009), Dal Bó and Rossi (2011), Ferraz and Finan (2011), Enikolopov et al. (2013)

4. Long-run Effects of Institutions. Local and Macro development. Persistence on the Local Level. Methods: More on Regression Discontinuity, Instrumental Variables

- ✓ Dell (2010)[†], Acemoglu and Johnson (2007)[†]
- ✓ Chapter 6 of Angrist and Pischke (2008)*, Michalopoulos and Papaioannou (2013 a,b)*
- ✓ Chapter 4 of Angrist and Pischke (2008)*, Banerjee and Iyer (2005)*, Nunn (2008)

5. Overview of Long-run Growth and Macro-development Perspective. Methods: Difference in Differences

- ✓ Nunn and Qian (2011)[†]
- ✓ Chapter 5 (5.2) of Angrist and Pischke (2008)*, Dell et al. (2012)*
- ✓ Acemoglu et al. (2001), Galor (2005)

6. Conflict: Civil Wars, International Conflicts, Causes of Conflict, and Costs of Conflict. Counterinsurgency. Methods: more on Difference in Differences; Synthetic Controls

- ✓ Dube and Vargas (2013)[†], Abadie and Gardeazabal (2003)[†]
- ✓ Blattman and Miguel (2010)*, Hjort (2014)*, Spolaore and Wacziarg (2016)*, Dell and Querubin (2017)*
- ✓ Fearon (1995), Miguel et al. (2004), Beath et al. (2011), Crost et al. (2014), Nunn and Qian (2014), Caselli et al. (2015), Iyigun et al. (2017)

7. State Capacity, Formation of State Capacity and Public Goods Provision

- ✓ Weigel (2017)[†]
- ✓ Alesina et al. (2004)*, Besley and Persson (2009)*, De La Sierra et al. (2014)*
- ✓ Besley and Persson (2010), Gennaioli and Voth (2015), Banerjee and Somanathan (2007)

8. Corruption: Efficient or Inefficient? Monitoring Corruption. IO of Corruption. Methods: Experiments with Corruption, Structural Methods

- ✓ Bandiera et al. (2009)[†], Oliva (2015)[†]
- ✓ Bertrand et al. (2007)*, Olken (2007)*, Olken and Barron (2009)*, Ferraz and Finan (2011)*, Olken and Pande (2012)*, Colonnelli and Prem (2017)*, Weaver (2016)*
- ✓ Reinikka and Svensson (2004), Shleifer and Vishny (1993), Di Tella and Shargrodsky (2003), Fisman and Miguel (2007), Fisman (2001), Banerjee et al. (2012), Sequeira (2012), Sequeira (2012)

9. Media. Government Control. Media Bias. Media Impact on Voting and Protests

- ✓ Enikolopov et al. (2016)[†];

- ✓ Ferraz and Finan (2008)*, Gentzkov and Shapiro (2010)*, Enikolopov et al. (2011)*
- ✓ Snyder Jr and Strömberg (2010), Besley and Burgess (2002), DellaVigna and Kaplan (2007), Gentzkow and Shapiro (2010), Gentzkow et al. (2011)

The full reference list will be posted on the class website.

LABOR ECONOMICS I

Lecturer:

Daniel Münich

(daniel.munich@cerge-ei.cz, office 303, phone 175)

Mariola Pytliková

(mariola.pytlikova@cerge-ei.cz; office 310, phone +420 739211312)

Teaching assistant:

TBA

Office hours:

DM: Fri 14-16 (+ upon request & anytime if doors are open); **MP:** upon appointment (by email)

Course information

The course will provide fundamental understanding of stylized labor supply and demand in their static and advanced versions, and models of wage determination. The course will combine theoretical concepts, empirical evidence and methodologies of empirical approaches including use of econometrics tools and data. Debates involving students about relevance for public policies and mechanism designs will be encouraged.

The course has three major goals (i) to guide students through current theoretical and empirical understanding of major labor market issues, (ii) to promote student's own empirical research on selected topics, (iii) to make students familiar with common research resources, standards and approaches in the field. Throughout the topics, empirical methodological approaches will be clarified (data and techniques econometric / identification).

The prerequisite for the course is familiarity with principles of microeconomic theory and econometrics from the 1st year.

Course outline

LABOR SUPPLY

- ✓ Key terms, framework, resources (DM)
- ✓ Labor supply model, non-linear price lines, participation, tax-ben schemes (DM)
- ✓ Home production, interpersonal transfers, allocation of (non)market time (DM)
- ✓ Labor supply over life-cycle (DM)
- ✓ Retirement and aging; Early retirement plans (MP)

- ✓ Family and work; Family policies (MP)

MODELS OF WAGE STRUCTURES

- ✓ Human capital and competing models (DM)
- ✓ Differentials on labor markets by gender and ethnicity, discrimination (MP)
- ✓ Changes in wage structures, income inequality (MP)
- ✓ Pay & productivity-wage determination within firms, incentive pay, efficiency wages (MP)

LABOR DEMAND

- ✓ Static and dynamic labor demand (DM)
- ✓ Theory of firm (standard, state owned, coops, labor managed) (DM)
- ✓ Minimum wages; unions; bargaining (MP)

OTHER SPECIFIC ISSUES

- ✓ Job turnover, matching and search, unemployment duration (DM)
- ✓ Economics of Migration (MP)
- ✓ Labor market effects of international trade and FDI; Production sharing (MP)

Requirements and grading

Grades will be based on student's performance in the final exam (55%), a term paper i.e. Critical Literature Review = CLR (25%), and an empirical assignment (20%).

The aim CLR is to make students familiar with real empirical econometric analysis on labor econ topic using real empirical data. The CLR is expected to be carefully crafted academic literature review on a course related topic of own choice containing student's critical insight.

Detailed information, announcements and lecture materials (readings, links, lecture notes, etc.) will be made available via course web page.

Readings

Numerous selected chapters from:

HBLE (Handbook of Labor Economics, Vol. 1, 2, 3, 4A, 4B, Edited by O. Ashenfelter, R. Layard and D. Card, Elsevier) at <http://econpapers.repec.org/bookchap/eelabhes/>

HBEE (Handbook of Economics of Education, Vol. 1, 2, 3, 4, Edited by E.A. Hanushek, S.Machin, L.Woessmann, Elsevier)

Labor Economics, George Borjas

Economics of Migration, Bansak, Simpson and Zavodny

Modern Labor Economics, Ehrenberg and Smith

Hamermesh, Daniel S. and Albert Rees (1984) "The Economics of Work and Pay"

Hamermesh, Daniel S. (1993), "Labor Demand" (Princeton University Press)

Auxiliary reference texts:

Econometric Analysis of Cross Section and Panel Data, Jeffrey M. Wooldridge, MIT Press, 2010

A Guide to Econometrics, Peter Kennedy

Additional readings (journal articles and papers) will be assigned via course web-site for mandatory and optional readings before and after particular lectures.

MACRO TOPICS I

Lecturer:

Byeongju Jeong

(byeongju.jeong@cerge-ei.cz, office 321, phone 233)

Office hours:

TBA

Course information

We will study some macro topics. Below are the papers that we will study first. They are listed in the order of discussion. After studying them, we will continue with some other papers of our choice. You are required to read the papers in advance of lectures and to write a short question at the beginning of each lecture. Lectures will build on your questions about the contents of the papers.

Requirements and grading

The grade is based on the midterm exam (one-fourth), the final exam (one-fourth), occasional home problems (one-fourth), and your questions submitted at the beginning of lectures (one-fourth).

Readings

Stansbury, A. and Summers, L. (2020), "Declining Worker Power and American Economic Performance," Brookings Papers on Economic Activity, Spring.

Guvenen, P., Kuruscu, B., Tanaka, S., and Wiczer, D. (2020), "Multidimensional Skill Mismatch," *American Economic Journal: Macroeconomics* 12: 210-244.

Beaudry, P., Galizia, D., and Portier, F. (2020), "Putting the Cycle Back into Business Cycle Analysis," *American Economic Review* 110: 1-47.

Guvenen, F., Kambourov, G., Kuruscu, B., Ocampo-Diaz, S., and Chen, D. (2019), "Use it or Lose it: Efficiency Gains from Wealth Taxation," Manuscript.

Bocola, L. and Lorenzoni, G. (2020), “Financial Crises, Dollarization, and Lending of Last Resort in Open Economies,” *American Economic Review* 110: 2524-2557.

PUBLIC FINANCE

Lecturer:

Marek Kapička

(marek.kapicka@cerge-ei.cz, office 328, phone 236)

Office hours:

TBA

Course information

This course studies topics in the optimal design of tax and transfer policies. We will study economies where the underlying information structure is explicitly specified, and all tax instruments arise endogenously. We will discuss optimal capital and income taxation, optimal estate taxes and other applications.

If time permits, we will also discuss other topics, such as long run properties of the efficient allocations, efficient allocations with persistent private information and the implications of hidden savings and endogenous insurance markets.

Course outline

- *Ramsey Taxation*
- *Production Efficiency*
- *Static Mirrlees Taxation*
- *Dynamic Mirrlees Taxation*
- *Other topics.*

Requirements and grading

Grades will be based on the final exam (20%), problem sets (20%), and a term paper (60%).

The term paper can be an original idea, or an extension of an existing paper. It needs to be related to the topics covered in this course, and should be about 10-15 pages long. You need to have the topic approved by the end of the Midterm week. The final draft of the term paper must be submitted by the end of the first week of the Spring semester.

Readings

Course Outline (* denotes required reading)

Ramsey Taxation

Anthony B. Atkinson and Joseph E. Stiglitz. *Lectures on public economics*. McGraw Hill, 1980.

Alan Auerbach and James R. Hines, Jr. *Taxation and Economic Efficiency*. Handbook of Public Economics, 2002.

*Diamond, P. and Mirrlees, J., *Optimal Taxation and Public Production II: Tax Rules*, American Economic Review 1971

*Diamond, P., *A Many-Person Ramsey Tax Rule*, Journal of Public Economics 1975

Christophe Chamley. *Optimal taxation of capital income in general equilibrium with infinite lives*. Econometrica, 54(3):607-622, 1986

Kenneth L. Judd. *Redistributive taxation in a simple perfect foresight model*. Journal of Public Economics, 28(1):59-83, 1985.

*Chari, V. V., & Kehoe, P. J. (1999). *Optimal fiscal and monetary policy*. Handbook of Macroeconomics, 1, 1671-1745.

Ivan Werning and Ludwig Straub, Ludwig. *Positive Long Run Capital Taxation: Chamley-Judd Revisited*. working paper, MIT.

V. V. Chari, V.V., Juan Pablo Nicolini and Peter Teles. *More on the Optimal Taxation of Capital*. Working paper, University of Minnesota

Erosa, Andres and Martin Gervais. *Optimal taxation in life-cycle economies*. Journal of Economic Theory, 105(2):338-369, 2002

Production efficiency

*Peter A. Diamond and James A. Mirrlees. *Optimal taxation and public production I: Production efficiency*. American Economic Review, 61(1): pp. 8-27, 1971

Anthony B. Atkinson and Joseph E. Stiglitz. *The Design of Tax Structure: Direct versus Indirect Taxation*. Journal of Public Economics, 6:55-75, 1976.

Static Mirrlees Taxation

*Joseph Stiglitz (1988). *Pareto efficient and optimal taxation and the new new welfare economics*. in: A. J. Auerbach & M. Feldstein (ed.), Handbook of Public Economics, edition 1, volume 2, chapter 15, pages 991-1042.

James A. Mirrlees. *An exploration in the theory of optimum income taxation*. The Review of Economic Studies, 38:175-208, 1971.

*Peter A. Diamond. *Optimal income taxation: an example with a U-shaped pattern of optimal marginal tax rates*. American Economic Review, 88:83-95, 1998

* Emmanuel Saez. *Using elasticities to derive optimal income tax rates*. Review of Economic Studies, 68:205-229, 2001

Florian Scheuer and Ivàn Werning. *Mirrlees meets Diamond-Mirrlees: Simplifying Nonlinear Income Taxation*. Working paper, 2018.

Gregory N. Mankiw and Matthew Weinzierl. *The optimal taxation of height: A case study of utilitarian income redistribution*. American Economic Journal: Economic Policy, 2(1):155-176, 2010

Florian Scheuer and Casey Rothschild. *Redistributive taxation in the Roy model*. *Quarterly Journal of Economics*, 128: 623-668, 2013

Florian Scheuer and Casey Rothschild. *Optimal taxation with rent-seeking*. *Review of Economic Studies*, 1225-1262, 2016.

Peter Diamond. *Income taxation with fixed hours of work*. *Journal of Public Economics*, 13(1):101-110, 1980

Emmanuel Saez, Stefanie Stancheva, and Thomas Piketty. *Optimal taxation of top labor incomes: A tale of three elasticities*. American Economic Journal: Economic Policy, 2013

Laurence Ales and Christopher Sleet. *Taxing top CEO Incomes*. *American Economic Review*, 106(11): 3331-66, 2016.

Henrik J. Kleven, Klaus T. Kreiner and Emmanuel Saez. *The Optimal Income Taxation of Couples*. *Econometrica*, 77: 537–560, 2009.

Bovenberg, A. and Bas Jacobs (2005). *Redistribution and Education Subsidies are Siamese Twins*, *Journal of Public Economics*, 89, 2005-2035.

Dynamic Mirrlees Taxation

Narayana R. Kocherlakota. *The New Dynamic Public Finance*. Princeton University Press, 2010

Mikhail Golosov, Aleh Tsyvinski, and Ivàn Werning. *New dynamic public finance: a user's guide*. NBER Macroeconomic Annual, 2006

*Mikhail Golosov, Narayana R. Kocherlakota, and Aleh Tsyvinski. *Optimal indirect and capital taxation*. *The Review of Economic Studies*, 70:569-587, 2003

Narayana R. Kocherlakota. *Zero expected wealth taxes: A Mirrless approach to dynamic optimal taxation*. *Econometrica*, 73:1587-1621, 2005

Emmanuel Farhi and Ivan Werning. *Capital taxation: Quantitative explorations of the inverse Euler equation*. Working paper, MIT, 2007

Stefania Albanesi and Christopher Sleet. *Dynamic optimal taxation with private information*. *The Review of Economic Studies*, 73(1):1-30, 2006

*Mikhail Golosov and Aleh Tsyvinski. *Designing optimal disability insurance: A case for asset testing*. *Journal of Political Economy*, 114:257-279, 2006

Borys Grochulski and Narayana R. Kocherlakota. *Nonseparable preferences and optimal social security systems*. Working paper, Federal Reserve Bank of Minneapolis, 2008

- Marek Kapicka. *Optimal Mirrleesian Taxation in a Ben-Porath Economy*. AEJ: Macroeconomics, 2015
- Borys Grochulski and Thomas Piskorski. *Risky human capital and deferred capital income taxation*. Journal of Economic Theory, 145(3):908-943, 2010.
- Matthew C. Weinzierl. *The surprising power of age-dependent taxes*. The Review of Economic Studies, 78:1-29, 2011
- Marco Battaglini and Stephen Coate. *Pareto efficient income taxation with stochastic abilities*. Journal of Public Economics, 92(3-4):844-868, 2008
- Emmanuel Farhi and Ivàn Werning. *Insurance and taxation over the life-cycle*. Review of Economic Studies, 80:596-635, 2012.
- Mikhail Golosov, Aleh Tsyvinski, and Maxim Troshkin. *Optimal dynamic taxes*. Working paper, Yale University, 2011
- Sebastian Findeisen and Dominik Sachs. *Education and optimal dynamic taxation: The role of income-contingent student loans*. Journal of Public Economics, 138:1-21, 2016.
- Stantcheva, S. (2017). *Optimal taxation and human capital policies over the life cycle*. Journal of Political Economy 125(6), 1931 – 1990
- Makris, M. and A. Pavan (2018). *Taxation under learning-by-doing*. Working paper.
- Fabian Kindermann and Dirk Krueger. *High Marginal Tax Rates on the Top 1%? Lessons from a Life Cycle Model with Idiosyncratic Income Risk*. Working paper, 2014.
- Alejandro Badel and Mark Huggett. *Taxing Top Earners: A Human Capital Perspective*. Working paper, 2014.
- Mikhail Golosov, John Hassler, Per Krusell, P. and Aleh Tsyvinski. *Optimal Taxes on Fossil Fuel in General Equilibrium*. Econometrica, 82: 41–88, 2014

Long Run Properties of the Optima

- J. Thomas and T. Worrall. *Income fluctuations and asymmetric information: An example of the repeated principal agent problem*. Journal of Economic Theory, 51:367-390, 1990
- Edward J. Green. *Lending and the smoothing of uninsurable income*. In E. Prescott and N. Wallace, editors, Contractual Arrangements for Intertemporal Trade. Minneapolis: University of Minnesota Press, 1987
- Andrew Atkeson and Robert E. Lucas, Jr. *On efficient distribution with private information*. The Review of Economic Studies, 59:427-453, 1992
- Andrew Atkeson and Robert E. Lucas, Jr. *Efficiency and equality in a simple model of efficient unemployment insurance*. Journal of Economic Theory, 66:64-98, 1995
- Emmanuel Farhi and Ivàn Werning. *Inequality and social discounting*. Journal of Political Economy, 115(1):365-402, 2005

Persistent Private Information

- Ana Fernandes and Christopher Phelan. *A recursive formulation for repeated agency with history dependence*. Journal of Economic Theory, 91(2):223-247, 2000

Yuzhe Zhang. *Dynamic contracting, persistent shocks and optimal taxation*. Journal of Economic Theory, 144:635-675, 2009

Marek Kapicka. *Efficient allocations in dynamic private information economies with persistent shocks: A first-order approach*. Review of Economic Studies, 2013

Kenichi Fukushima and Yuichiro Waki. *Computing dynamic optimal mechanisms when hidden types are Markov*. Working paper, University of Minnesota, 2011

Hidden Savings

Harold L. Cole and Narayana R. Kocherlakota. *Efficient allocations with hidden income and hidden storage*. The Review of Economic Studies, 68:523-542, 2001

Alberto Bisin and Adriano Rampini. *Markets as beneficial constraints on the government*. Journal of Public Economics, 90:601-629, 2006

Narayana R. Kocherlakota. *Figuring out the impact of hidden savings on optimal unemployment insurance*. Review of Economic Dynamics, 7(3):541-554, July 2004

Ivan Werning. *Moral hazard with unobserved endowments: A recursive approach*. Working paper, University of Chicago, 2001

Arpad Abraham, Sebastian Koehne, and Nicola Pavoni. *On the first order approach in principal-agent models with hidden borrowing and lending*. Journal of Economic Theory, 146:1331-1361,,

TIME SERIES ECONOMETRICS

Lecturers:

Stanislav Anatolyev

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Teaching assistant:

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Office hours:

 by appointment

Course information

This course represents the first half of the two-semester sequence *Time series and financial econometrics*, and covers important aspects of modern time series econometrics. After reviewing of (or getting acquainted with) basic time series notions like stationarity, Wold decomposition, etc., we will discuss principles of non-structural time series modeling and review various model selection procedures. After that we will study popular models of conditional mean dynamics such as linear autoregressions and vector autoregressions as well as nonlinear structures like threshold, smooth transition and regime switching models. We will also explore such issues as stationarity vs integratedness and unit roots, and get acquainted with the notion of Brownian motion useful in other contexts as well. Then we will turn to modeling conditional variance and, more generally, volatility. We will also review modeling and forecasting other conditional objects such as conditional quantiles, probabilities, and densities. Finally, we will study methods of dealing with structural instability.

Course outline

I. Basics of time series analysis

- Stationarity and ergodicity. Linear processes. Lag operator.
- Innovations and Wold decomposition. AR, MA, ARMA, ARIMA. Box-Jenking methodology.
- Trend stationarity and difference stationarity.
- Nonlinear processes. Processes with time-varying parameters.

II. Modeling methodology and model selection

- Structural and non-structural time series modeling.
- Object of dynamic modeling: conditional mean, conditional variance, conditional quantile, conditional direction, conditional density.
- Model selection: diagnostic testing, information criteria and prediction criteria. Model confidence sets.
- General-to-specific and specific-to-general methodologies. Data mining.
- Predictability and testing for predictability.

III. Modeling conditional mean

- Stationary AR models: properties, estimation, inference, forecasting.
- Stochastic and deterministic trends, unit root testing. Brownian motion, FCLT.
- Nonlinear autoregressions: threshold autoregressions, smooth transition autoregressions, Markov switching models, state-space models.
- Stationary VAR models: properties, estimation, analysis and forecasting. Nonlinear VAR.
- Spurious regression, cointegrating regression, and their asymptotics. Engle-Granger test.

IV. Modeling conditional variance and volatility

- The class of ARCH models: properties, estimation, inference and forecasting.
- Extensions: IGARCH, ARCH-t. Time-varying risk and ARCH-in-mean.
- Multivariate GARCH: vech, BEKK, CCC, DCC, DECO. Variance targeting.
- Other measures of financial volatility: RiskMetrics, ranges, realized volatility.
- MEM models for RV and ranges. HAR models for RV. Models for jump.

V. Other topics on modeling and forecasting

- Ultra-high frequency data models: ACD, UHF–GARCH.
- Modeling and forecasting conditional density. ARCD modeling.
- Multivariate dynamic densities. Copula machinery.
- Modeling and forecasting direction-of-change. Directional predictability.
- Modeling and forecasting conditional quantiles. Value-at-risk. CAViaR model.
- Generalized autoregressive score models. MIDAS models.

VI. Analysis of structural stability

- Identification, estimation and testing for structural breaks. Andrews and Bai-Perron tests.
- Retrospection and monitoring for structural stability. CUSUM and other sequential tests.

Requirements, grading, and attendance policies

- The course presumes reading of textbooks and publications, as well as practical computer work with real data.
- There will be weekly home assignments combining theoretical exercises and empirical practice (20% of the course grade).
- One will need programming econometric software to do empirical exercises. MATLAB is recommended as a baseline, but GAUSS, Python and/or R are also options whenever appropriate.
- One may do empirics using low-level programming and get up to the exercise's full credit (and master the techniques), or, alternatively, utilize embedded high-level commands/libraries and get up to 25% of the exercise's full credit (and most likely not learn relevant techniques).
- There will be a presentation/mini-lecture (30-40 minutes) on a particular topic assigned far in advance (10% of the course grade).
- There will be a midterm exam (30% of the grade) and a final exam (40% of the grade).
- All the above components are mandatory (two home assignments are excused – for this count but not for the score) for getting a passing grade.
- Discussion sections will be devoted to solving problems and discussing relevant (both theoretical and applied) literature. Active participation in discussion sections will be awarded by up to bonus 10% of the course grade.

Readings

Main textbooks

Hamilton, James (1994). *Time Series Analysis*, Princeton University Press, selected chapters.

Franses, Philip and Dick van Dijk (2000). *Nonlinear Time Series Models in Empirical Finance*, Cambridge University Press, chapters 1–4.

Tsay, Ruey (2005). *Analysis of Financial Time Series*, John Wiley & Sons, chapters 1–5, 7–8, 10.

Additional materials

A number of methodological materials and published journal articles will be assigned for reading.

Academic integrity policy

Cheating, plagiarism, and any other violations of academic ethics at CERGE-EI are not tolerated.

ACADEMIC WRITING II / RESEARCH WRITING II

Lecturers:

Andrea Downing

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Gray Krueger

(grayson.krueger@cerge-ei.cz, office 126, phone 259)

Course Co-ordinator:

Deborah Nováková

(deborah.novakova@cerge-ei.cz)

Office hours:

TBA

Course Information

This year, AW2 and RW2 will be held fully on-line, due to the Covid-19 situation. We appreciate the understanding and co-operation of the students across the semester and will make every effort to support and engage you at both class and individual levels.

The courses support ongoing development of PhD level English and the skills required to produce PhD academic papers and publishable texts through explicit study of in-field language and genre. The course also includes specialized workshops on articles (a, an, the), punctuation, and writing abstracts. Students practice and process their writing through continuing revision of draft work from the idea stages to the final version, in response to peer and instructor feedback via discussion and on draft texts. Instructors provide individual consultations and extended written feedback in student texts, aimed to support each student in developing his/her individual writing skills.

A peer feedback process will be applied to all written submissions on the course, and the peer review of the final paper draft comprises a significant portion of the final grade.

Building upon the work in Academic Writing 1, students will research, plan, and write an academic Position Paper on a topic chosen by the student. The paper should both analyze the work of others and present the students' own distinct position on the topic. This paper may form a basis or thought exercise for a practice research proposal in spring 2021, which could be developed for DPW later on.

AW2 and RW2 differ only in that the MAER students will be offered optional consultations on any sections of their MA thesis that they are working on across the semester.

Requirements and grading

In addition to the marked assignments below, expect a range of smaller writing tasks beginning with production of a professional biography. The peer feedback step applies to all works.

Four Marked Assignments:

First Summary Task	10%	Due Sunday, October 4
Abstract of the Final Paper	10%	Due Wednesday, November 25

Peer Review of Position Paper	20%	Due Monday, 7 December
Final Position Paper	60%	Due Friday, 11 December

Students are evaluated according to their ability to produce graduate-level written academic texts in English.

100% attendance is mandatory, including at workshops and plenary sessions. Any necessary absences must be discussed with your instructor, preferably in advance, and any work missed must be made up. Missing more than three classes (unexcused) will result in a one-letter-grade penalty on the final course grade. The ASC forgives absences and late submissions of graded tasks in cases when the SAO informs us that the absence/s is/are officially excused. Any unexcused late submission will be automatically graded 0.

C. Third year courses

COMBINED SKILLS II - PhD

Lecturers:

Andrea Downing

(Andrea.Downing@cerge-ei.cz; office 317, phone 254)

Office hours:

TBA

Gray Krueger

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Office hours:

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Seminar Information

This is the final required credit course for the Academic Skills Centre.

The seminar is designed primarily to assist dissertation proposal workshop participants with their written research proposals and presentations via consultation with Academic Skills Center faculty. For DPW candidates, the seminar will work towards the first official DPW draft due November 1st (or as SAO announces). Consultations will continue through November until DPW week, and afterwards if necessary, prior to the final submission date for the ASC credit course. All students deliver a presentation of their research proposals close to DPW week in November. Students not wishing to participate in DPW can complete the course requirements by participating in all elements of the course without final attendance at DPW.

Attendance is compulsory at one plenary workshop (announced in early October), the practice presentations prior to DPW week, and at least two individual consultations. Dates of compulsory meetings/presentations will be announced by the ASC in advance.

Evaluation

This is an Academic Skills Center graded course, which includes evaluation of the written proposal and presentation. 70% of available marks are allocated to the written research proposal, and 30% to the assessed presentation.

NOTE: Full participation in the seminar, consultations, and completion of all required tasks are the minimum requirements for passing the course. Students may opt to attend the whole seminar online, including the mandatory consultations and final assessed presentation; no student will be required to attend in person.

Notes: