This course introduces PhD students to both long-run economic growth theory and econometric methods for policy evaluation and research. We will motivate the role of public policy – and institutions – to enhance economic performance using the theoretical framework of endogenous growth models pioneered by Paul Romer (2018 Nobel laureate in economics), and others.

Then, we will emphasize experimental design evaluations using randomization techniques of the type underlying the economic development research agenda of Abhijit Banerjee, Esther Duflo and Michael Kremer (2019 Nobel laureates in economics). Finally, we will study some cutting-edge analyses with quasi-experimental designs (QEDs) – including synthetic control methods, econometric applications of causal inference with machine learning algorithms, difference in differences with matching techniques, and econometric estimation based on rare-event data.

Seminal models will be presented and discussed to motivate the key task of economic analysis in policy: to furnish evidence using scientific methods that can be the base for policy design and formulation. After exploring the theoretical foundation from endogenous growth models about the key role of policy to shape market outcomes, we will develop an impact evaluation methods toolkit for causal inference on the effects of programs embedding public policies. Our learning objectives are (i) solidifying the understanding of channels whereby public policy impinges on economic performance in the long-term, and (ii) harnessing the building blocks for program evaluation methodology to assemble a toolkit for causal inference.

The assignments for the course are designed not only to further understanding of diverse areas of advanced economic analysis for public policy research but also to develop students’ quantitative methods toolkit. There are two research assignments: a referee report (with a possible replication component) and a term paper (that can include original data work). The referee report is a short critical review of an empirical economic policy paper describing its contributions (and shortfalls), as well as suggestions for further research.
One alternative for the term paper involves empirical analysis extending the results in the refereed paper – through replication and possible empirical extensions. Another possibility for the term paper is a detailed literature review of existing research on a specific policy issue – possibly followed by original empirical analysis exploring extensions of that literature. There will be in-class presentations of the research prospectus (early in the semester) for the term-paper.

Assessments and Grades

For the overall grade, class participation counts for 15%, the referee report for 15%, the term-paper prospectus for 15%, the in-class presentation 15%, and the term paper for 40%.

Outline of Topics

This list of topics (as well as the list of readings) is for general reference and we may not be able to cover all the materials over the semester. We will almost certainly cover all of topics 1-3, with partial coverage possible for topics 4-6 as time permits.

1) Public policy and long-run economic performance: Endogenous growth models
   a) New-classical and endogenous growth
   b) Convergence and catch-up growth: The role of economic policy
2) Experimental designs for program impact evaluations: Randomized Control Trials
   a) Mechanisms: structural econometrics, qualitative evaluations, mixed methods
   b) Horizon: short – vs. long–run effects
   c) Scaling-up criteria: Outcome space for cost-benefit analysis (CBA)
3) Synthetic methods: Approach, relevance and shortfalls
4) Optimized matching: Pros and cons across contexts of different techniques
5) Machine learning in econometrics: Potential applications and drawbacks
6) Selected topics on causal inference: Rare events, clustering, sampling, and statistical non-significance

Reading List

Selected General Reference Econometrics Textbooks

Assigned Papers by Topic

The lists below include assigned papers covered in class, designated by asterisk (*), and optional papers to expand your knowledge on issues especially germane to your research interests.

1. Public policy and long-run economic performance: Endogenous growth models
   a) Neo-Classical and Endogenous Growth: OLG, Solow and Romer Models


   b) Convergence and Catch-up Growth: Theory, Evidence and Econometric Issues


2. Experimental designs for program impact evaluations: Randomized Control Trials


  a) Causal mechanisms and structural econometrics


  b) Horizon: short – vs. long–run effects


c) Scaling-up criteria: Outcome space for cost-benefit analysis (CBA)


3. Synthetic Methods


4. Machine Learning in Econometrics


5. Optimized Matching Designs


6. Selected Topics on Causal Inference


