

Empirical Economics of Education – Syllabus

Room: Seminarraum 1, Oeconomicum building
Time: Tuesday, 8:30am, first session on Apr. 10
Target group: Master VWL, Master BWL

Motivation and course description

If you read these lines you have probably decided at some point in the past to forgo a couple of years of high school graduate earnings and lifestyle in favor of studying economics. Maybe you did not do the math to calculate your income and the present value of non-monetary factors with and without a college degree and based your decision on these numbers, but you certainly gathered some pieces of information on the costs of studying and the labor market perspectives economists' face. In other words, you made an important decision about your education using some kind of economic rationale by comparing how your life would look like depending on your decision to study.

However, you probably hesitate to generalize your decision to other people and whether they should take higher education as well. While you may have a rather good grasp of your own skills and motivation and, in turn, your expected returns, you don't know those things for others. Still, for individuals who face educational decisions and political decision-makers it is crucial to know which kind of education is beneficial for certain (groups of) individuals. Should parents give their toddler into childcare in order to work or is it preferable for the child's development if one parent stays at home? Should a high school graduate who wishes to maximize her lifetime earnings study engineering, economics, fine arts, or maybe not study at all? Should a government spend billions of tax money on building-up new universities?

The economics of education seeks to answer those things – or at least to provide some pieces of evidence. Although the array of research questions is vast, the key problem is nearly always the same: the observed level of education is subject to an individual's choice. Agents may select themselves into certain kinds of education based of their anticipated costs and benefits. Disregarding such selection causes naïve estimates of the returns to education to be biased. This course gives an overview over research designs and their applications that are able to address this identification problem. While the estimation strategies in the heart of this course have emerged in the toolkits of many fields in empirical microeconomics, the economics of education research provides a large variety of credible applications.

In a lecture part, this course presents and interprets the key findings from studies that address the selection problem by means of field experiments or quasi-experimental settings. In a hands-on project part, students apply program evaluation methods that exploit quasi-experimental variation to a specific research question within the economics of education.

Lecture: Methods and Key Findings in the Economics of Education

As there is no comprehensive textbook, the lecture part builds on a number of important must-reads as well as on cutting-edge research papers in the economics of education. We discuss both, field experiments that provide firm evidence and quasi-experimental designs that aim at questions beyond the scope of what is possible in experiments. Most parts of the lecture are taught as an “inverted classroom.” That is, we (*you* and me) read the papers in advance of the lecture and in the lecture (that is ideally closer to a reading group than to a traditional lecture) we then discuss and compare the papers in a number of dimensions, such as their identifying assumptions, contribution to the literature, and the numerical and economic interpretation of the results. In order to make this course a success you should be motivated to work through some of the papers before we discuss them. In order to set some incentive, this is also important for the final grading (see in what follows).

Table of contents of the lecture (preliminary)

1. Introduction
 - 1.1. Organizational remarks
 - 1.2. The need for research in the economics of education
 - 1.3. Setting the stage
2. The returns to early childhood interventions
 - 2.1. Experimental evidence from the Perry Preschool Program
 - 2.2. External validity in quasi-experimental large-scale settings
3. The returns to years of education
 - 3.1. The returns to secondary schooling
 - 3.2. The returns to college education
 - 3.3. Non-monetary returns to education
4. The signaling effect of education
 - 4.1. Measurement of education and degrees
 - 4.2. Varying degrees while holding education constant
5. Input-based educational policies and classroom environment
 - 5.1. Compound measures
 - 5.2. Class size
 - 5.3. Instructional time
 - 5.4. Teacher payment
 - 5.5. Teaching style
 - 5.6. Peer effects
6. Organization and competition of schools

- 6.1. School choice
- 6.2. Tracking
- 6.3. Central exit examinations
- 6.4. School autonomy

Project: Applied Program Evaluation Methods in the Economics of Education

In the project part of this course, you employ the empirical strategies covered in lecture part to actual datasets and write your own (a bit shorter and less elaborated) paper. The topic of the paper may be closely related to one of the topics in the lecture (for instance, a replication of one of the papers) and the data may be provided. By preparing the dataset for running the estimations of interest you learn some of the most important data operations when dealing with large quantities of data. You are free to choose whatever statistical software package you prefer (note, however, that detailed help will only be provided for Stata).

Grading

In order to pass the course you are required to submit and present five assignments as well as to submit the project paper. For every chapter 2–5 there is one assignment (2–3 pages) in which you summarize and discuss one or two of the papers we will later on discuss in the lecture. The assignments are to be submitted before the chapter is covered in the lecture and you will present your assignments in a short oral presentation at the beginning of the lecture in order to stimulate the discussion. The project paper should cover 12–15 pages and is to be submitted by the end of the semester. There is no final exam. Details as well as important dates will be announced in the first lecture.

Requirements

When attending this course you ideally have a basic understanding of research designs from the experimental and quasi-experimental toolkit (that is, you are familiar with the ideas of randomized controlled trials, differences-in-differences estimation, and so on). If you have not yet heard of those concepts you may still participate in the course but you should be willing to work through some of the concepts by yourselves (I am happy to suggest textbooks, etc.). For the project part, it is desirable but not necessary if you already have some experience in working empirically and some basic knowledge of, for instance, Stata. Again, if you have not done so much as calculating the mean of a variable using some software package, you still welcome to participate if you are motivated to make yourself familiar with the basics.

Note: This course does not substitute an in-depth econometrics course that introduces the methods covered here more thoroughly in terms of their properties and asymptotics. This course focuses on the intuition where the selection problem stems from and how different research designs address the selection.