COURSE SYLLABUS
03SM22MO0168, Econometrics for Policy Analysts
Fall 2024, Tuesdays 14:00-15:45
University of Zurich

Professor	Classroom	Office	Review session
David Yanagizawa-Drott	KOL-H-317	SOF-F-02	Thursday 16:15-18:00, RAK-E-6

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COURSE DESCRIPTION

When does a policy achieve its intended goals, and when does it not? How can we use data to answer this question? How do we "translate" what the data shows into language that a policymaker or the public can easily understand?

The general purpose of this course is to equip you with the tools necessary to tackle issues that involve the empirical analysis of public policy problems of the sort you might encounter in a professional environment. Specifically, the course introduces you to the use of multiple regression analysis and program evaluation for analyzing data in the social sciences. The emphasis is on empirical applications.

The primary goal is to become sophisticated and critical ***consumers of evidence*** - to provide you with the ability to analyze critically the empirical analysis done by others at a level sufficient to make intelligent decisions about how to use that analysis in the design of public policy - and a secondary goal is to become capable ***producers of evidence*** - to provide you with the skills necessary to perform empirical policy analysis on your own, or to participate on a team involved in such an empirical analysis. This includes both the design and analysis of experiments that aim at measuring policy effectiveness and the use of non-experimental methods to evaluate policy effectiveness. Contrary to typical courses in econometrics, we will do so in a rather non-technical manner, focusing more on building intuition, basic software skills, and ability to ***translate the evidence into language that makes it accessible to policy makers***. (That is, using very little math or equations.) Also, the pedagogy will be based on ***student-centered interactive learning***, rather than solely relying traditional lecture-based pedagogy. This means that you are expected to participate in classroom discussions.

To be bit more specific, we will first define and discuss when and how evaluations are useful, as well as provide a framework for thinking how to judge the quality of an econometric study. Then, we will then cover the key concepts of different program evaluation methods (e.g. difference-in-differences, randomized experiments, regression discontinuity design). This discussion will cover both the underlying statistics behind each technique, as well as how to draw relevant policy conclusions based on the statistical evidence. Through in-class exercises, case studies and assignments, students will practice using evaluation methods and will study the quality of the evidence. Examples will be primarily, but not exclusively, drawn from international development and related topics, but the material will be useful for anyone who is generally interested in using quantitative analysis to improve policy making.

We will cover empirical questions, papers, examples, and data exercises from various policy-relevant topics. For example, this may include empirical investigations of questions such as: Does democracy lead to more redistribution to the poor? Does a higher minimum wage affect unemployment? Does mass media improve accountability and reduce corruption? Does targeting of militant leaders work as a counterinsurgency strategy? Does propaganda used by political elites increase civil conflict? Can programs aimed at social cohesion reduce the likelihood of civil war? Does schooling increase political participation of citizens? Does the gender of a policy-maker matter for the allocation of public goods? Thus, although this is primarily a methods course aimed at acquiring generalizable tools, we will approach them through the lens of specific empirical questions.

PREREQUISITES

Knowledge of statistics and econometrics at the introductory level.

TEXTBOOKS

Material for each class will be provided. While no textbook is mandatory, there are two textbooks I highly recommend as complementary reading in order for you to fully understand the econometric concepts and methods. Each topic is associated with recommended readings in these books. (See schedule at the bottom.)

Stock, J. and Watson, M., *Introduction to Econometrics, updated 3rd edition,* Addison-Wesley (2007)

Angrist, J. and Pischke, J-S., *Mastering 'Metrics*, Princeton University Press (2015)

CLASS PARTICIPATION AND ENGAGEMENT

I strongly believe that student participation can substantially enrich the learning experience for both the students and the instructor. In this spirit, class participation is encouraged. Effective class participation requires that you read any assigned readings *before* coming to class; this is particularly true when we do a case study. You are encouraged to ask questions, to share relevant insights you have from previous experiences, and to treat your classmates' participation with courtesy. I only ask that questions and comments be brief and related to the topic at hand. Given that there is heterogeneity in the classroom with respect to the prior skill sets, and pace of learning, I will sometimes need to defer questions to a future class or to discussion outside of lecture time.

GRADING

Post-Class Assessments:	10%
Empirical Assignments:	20%
Menti Participation:	10%
Final Project:	10%
Final Exam:	50%

POST-CLASS ASSESSMENTS

Post-class assessments are intended as short follow-up assignments to encourage you to stay on track with the course material. I recommend you review the class materials and do the assignments shortly after class.

1) You are required to submit all post-class assessments.
2) PCAs will be timed assignments on OLAT. They will go live on Thursday and must be submitted on the **Sunday before a lecture at 11:59pm**.
3) PCAs are considered individual work and must be pledged. Duplicate answers will not receive any credit and may be subject to disciplinary review.

EMPIRICAL ASSIGNMENTS

Empirical assignments are short problem sets that hone your applied econometrics toolkit.

1) You are required to hand in both empirical assignments.
2) To receive credit, empirical assignments **must be pledged and submitted by the start of class the day they are due**. Assignments are to be submitted via OLAT. Submission instructions will be provided during the first TA session. Assignments that are submitted late or fail to comply with the submissions instructions will not be graded.
3) You may discuss and work on the empirical assignments in small groups, so that you can help each other and maximize learning, but please note that everyone should strive to contribute equally. Please list the names of your study group member(s) on your problem set.
4) Stata, a statistical software package, is the primary software we will use; it is available in the Econ library at UZH. You may also use other software (e.g., R, Python) but please note that we cannot provide support for these.

MENTI PARTICIPATION

You are expected to attend and come to class prepared and to participate in class discussions. Participation will be monitored using menti.com, an online voting tool, which I will use to poll you during the lectures. To receive credit for participation, you need to log in at the beginning of every class with your UZH e-mail address. Remote submissions (without attendance) are subject to disciplinary review.

FINAL PROJECT

The final project will require you to apply some of the empirical methods learned in class to readings of empirical research. You will be facing a public policy problem where you will provide policy recommendation based on the evidence. More details will be provided later in the course.

ACADEMIC INTEGRITY

I will assume all students maintain the highest level of academic integrity. Note that discussion and the exchange of ideas are essential to academic work. For assignments in this course, you are encouraged to consult with your classmates. However, you should ensure that any written work you submit for evaluation is the result of your work and that it reflects your own approach and understanding of the topic.

All assignments in this class are subject to the Academic *Honor Code of the Faculty of Business, Economics, and Informatics*. Therefore, we ask you to pledge all assignments e.g., by typing the pledge during a post-class assessment and adding it to the top of an empirical exercise. Unpledged work will not be graded.

Please note that you can only enroll in either *Econometrics for Policy Analysts* or *Econometrics for Development Economists*. Enrolling in both courses—either simultaneously or across semesters is considered an honor offense.

COURSE SCHEDULE

Date (Day)	Topic	Stock & Watson	Angrist & Pischke	Assignments Due
REGRESSION FUNDAMENTALS				
17/9 (Tu)	Intro/How Evidence Informs Policy	1.2, 9.1, 9.2		
22/9 (Su)				Test PCA
24/9 (Tu)	How Evidence Informs Policy	1.2, 9.1, 9.2		Test EA
29/9 (Su)				
1/10 (Tu)	Controls & Bias	4.1-2, 5.1-2-3, 6.1-2-3	2.1, 2.2, 2.3	
6/10 (Su)				PCA1
8/10 (Tu)	Bad Controls		3.2.3	
13/10 (Su)				PCA2
15/10 (Tu)	Fixed Effects	10.3, 10.4	5	
20/10 (Su)				PCA3
22/10 (Tu)	Case study I (In-class presentations)			EA1

CAUSAL INFERENCE

29/10 (Tu)	Differences-in-Differences (& Synthetic Controls)	13.4	5	
3/11 (Su)				PCA4
5/11 (Tu)	Recent Advancements in Differences-in-Differences			
10/11 (Su)				PCA5
12/11 (Tu)	Case study II (In-class presentations)			
19/11 (Tu)	Instrumental Variables (IV/2SLS)	12.1, 12.3	3	
24/11 (Su)				PCA6
26/11 (Tu)	RDD, RDD + IV/2SLS	13.4	4	EA2
1/12 (Su)				PCA7
3/12 (Tu)	Case study III (In-class presentations)			
10/12 (Tu)	Field Experiments	13.2	1	
15/12 (Su)				PCA8
17/12 (Tu)	Review			Final Project

STUDY PERIOD

7/1 (Tu)	Final Exam [KOL-F-118]			

HANDOUT OVERVIEW

Lecture Handouts

1. Introduction
2. Controls & Bias
3. Bad Controls
4. Fixed Effects
5. Difference-in-Difference
6. Recent Advancements in Difference-in-Difference
7. Instrumental Variables
8. Regression Discontinuity
9. Randomized Experiments

TA Handouts

1. Regression Basics
2. Dummy Variables
3. Interactions
4. Binary Dependent Variables
5. Quadratics and Logs