Bard College Berlin
A LIBERAL ARTS UNIVERSITY

EC320 Econometrics
(Fall 2018)

Seminar Leader: Israel Waichman
Course Times: Tue 15:45-17:15 Wed 15:45-17:15
Place: P24, Seminar room 5
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Office hours: Wed 14:30-15:30 and Thu 10:45-11:45

Course Description

Econometrics is the application of statistical methods to analyze economic data (it is now also widely used in political science). Hence econometrics is essential to every branch of applied economics. In particular, econometrics methods are used to estimate economic relationships, test economic theories, and evaluate policies. The main objective of the course is to introduce students to basic econometrics techniques and to show them how to use these techniques to analyze empirical data. Another important objective is to develop the students' critical thinking about statistical inference (what can and cannot be inferred from the data). Finally, the course will enable students to apply their knowledge in analyzing field data. To this end, some of the classes are devoted to work with a statistical package. At the end of the course, students will have to demonstrate their econometrics skills by analyzing field data and presenting it to the class in a research workshop.

Learning Outcomes

- Introduce students to the problem of causal inference
- Introduce students to basic econometrics techniques
- Show economics application of econometrics analysis
- Enable students to conduct basic econometric analysis using their own data using Excel and Stata
- Devolve critical thinking about statistical inference

Requirements

Prerequisites

Students taking this course should have already successfully completed the courses “Statistics,” “Mathematics for economics,” and “Principles of Economics.” This course can be viewed as a follow up to the statistics course.

Textbooks

For this course, we will use two textbooks:

- “Introductory Econometrics: A modern approach” by Jeffrey Wooldridge (6th edition, CENGAGE Learning)
- “Mastering Metrics: The path from cause to effect" By Joshua D. Angrist and Jörn-Steffen Pischke (Princeton University Press)

Required readings are mostly from these books (other editions of the Wooldridge book may be used as well but the course will refer to the edition specified here). However, there are other sources that will be discussed in class. In this respect, another excellent textbook is

- "A guide to econometrics" by Peter Kennedy (Wiley-Blackwell)

It is essential that you will repeat at home the material that we cover in class (including solving again all the exercises that we did in the classroom).

Attendance
Attendance at ALL classes is expected. More than two absences (that is absences from two sessions of 90 minutes) in a semester will significantly affect the grade for the course.

Computer requirements
Students will be required to bring their laptops to some of the classes.

Assessment
Assessment will be based on attendance, preparation for classes, regular and active participation, handing in group problems sets, as well as a mid-term (60 minutes) which we will conduct at the end of week 9 (TBA), and a final empirical work where students will have to apply what they have learned to analyze data.

Grade breakdown

- Seminar participation, handing in problem sets, and class exercises 20%
- Mid-term exam 30% (at the end of week 9)
- Final empirical work 50% (20% presentation; 20% final written work; 10% discussant)

Final empirical work
As part of the course each pair of students will conduct an independent research project. The aim of the research project is to use field data to answer a well-defined research question. The research project requires the students to obtain and analyze a relevant data set (from an online source or to get the data, e.g., conduct a survey). The students will have to present their project in a research workshop to be held in week 13/14. They will also have to write a short research paper based on their findings.

Important dates:

- The research question, expected data, and a concrete plan how to obtain the data should be registered and approved by the instructor by the end of week 6 (October 12, 2018).
- In week 13/14 we will held a research workshop: 3 days before the final workshop a two-pages summary of methods and findings should be sent to the discussant.
- Each pair will held a 20-minute presentation. This will be followed by a 5-10 minutes discussion lead by the discussant.
- The final paper should be handed at the end of completion week.

Policy on Late Submission of empirical work

Please note the policy from the Student Handbook on the submission of essays: *essays that are up to 24 hours late will be downgraded one full grade (from B+ to C+, for example). Instructors are not obliged to accept essays that are more than 24 hours late. Where an instructor agrees to accept a late essay, it must be submitted within four weeks of the deadline and cannot receive a grade of higher than C. Thereafter, the student will receive a failing grade for the assignment*.

Schedule and Course structure

Classes start on Tuesday Sep 4 and run until Wednesday December 12, with fall break planned for Oct 29 – Nov 2. Completion week will take place on December 17–21. Note also that c*lasses missed due to federal holidays will not be rescheduled*.

The following course structure is provisional in order to allow for flexibility. It is the students' responsibility to keep themselves informed of any changes to the schedule provided here. An up-to-date schedule will be maintained by the course management in our Google classroom system. Lecture slides and problem sets will be posted in Google classroom. Please sign in for the course, password will be given in the first class.

In particular, we will study the following topics:

- Introduction: causal inference
- Review of statistics:
    - Steps of inferential statistics
    - Statistical analysis using Excel (including figures and formulas)
- The simple linear regression model:
    - Properties of least squares estimators
    - Inference and goodness of fit in the simple regression model
    - non linear transformations using log
- The multiple regression model
    - Inference and goodness of fit in the multiple regression model
    - Multicollinearity
    - Heteroskedasticity
- Economic applications (analyzing own data using STATA)

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