ECON 120B: Econometrics
Department of Economics
University of California, San Diego
Fall 2005

Lecture: MWF 2:00-2:50 Solis 107

Instructor: Greg Scott
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Course objectives: This course aims to prepare students for practical empirical research in the academic and business setting. Economics 120B introduces the three basic concepts in econometrics: quantifying uncertainty with confidence intervals; using regression to infer casual relationships; and using regression for prediction. The course provides the standard tools necessary to perform and read empirical research.

Texts: J.H. Stock and M.W. Watson, Introduction to Econometrics, 1st ed. Addison-Wesley, 2003

Course Requirements: The requirements for the course are (i) Homework 20%, (ii) Midterm Examinations 40%, and (iii) Final Examination 40%. There will be two Midterm Examinations each worth 20 percent and one cumulative Final Exam.

There will be (almost) weekly homework assignments posted on the class web page. I will announce in class when each assignment is posted and when it is due. Homework is to be handed in at the *beginning* of class. Homework will not be accepted by e-mail or in department mailboxes. If you need to hand in an assignment early because you cannot be in class on the day the homework is due, then please make arrangements with your TA.

Each homework assignment must have the following information:

1. Your name
2. Your Student ID Number

Each homework assignment is worth 2 points and the grading is as follows: 2 points if all of the problems have been attempted AND you show your work, 1 point if only some of the problems have been attempted OR if you don't show all your work, and 0 points if the assignment is not handed in or is late. Note that your homework grade does not depend on whether you get the correct answer, but rather on whether you have made a good faith effort to complete the assignment. Correct answers are important, but the goal of these homework assignments is to give you practice at solving the types of problems that you will see on exams. The lowest homework grade will be dropped. This is to allow some flexibility for students who are sick or who have other critical conflicts. Answers will be posted on the web shortly after the assignment is due.

Exam Policy: Dates of exams are **not** negotiable and you MUST take your final exam during the time specified for your lecture. If you miss a midterm for a verifiable medical/legal/sports reason, your midterm grade will be your grade on the final. Otherwise you will receive a zero, no exceptions!!

Midterm 1: Friday, October 21, in class
Midterm 2: Monday Nov 14, in class

Final Exam: Monday, December 9, 3:00-6:00pm

Academic Code of Honor: The class is conducted in accordance with the University of California, San Diego's Policy on Integrity of Scholarship. All work on the examinations and the written assignments is to be the work of the individual student. Students may (and are encouraged) to work together in preparation for classes and in studying for the exams.

Required Software
The software for this course is STATA (www.stata.com). Students can use STATA in the computer laboratory in Econ 100. Microsoft Excel may also be used to do basic regression analysis.

Outline (subject to change)

Introduction and Review (Chs 1-3)

- Probability
- Statistics

Linear Regression with One Regressor (Ch 4)

- Least square principle
- Sampling distribution of OLS estimator (data generating process)
- Confidence interval and hypothesis testing
- Heteroskedasticity and Homoskedasticity

Linear Regression with Multiple Regressors (Ch 5)

- Multiple regression model
- Omitted variable bias
- Sampling distribution of OLS estimator
- Confidence interval and hypothesis testing for a single coefficient
- Confidence set and joint hypothesis testing for more than one coefficients

Assessing Studies based on Multiple Regression (Ch 7)

- Internal validity of multiple regression
- Errors in variables bias
- Simultaneity
- Sample selection bias

Instrumental Variable regression (Ch 10.1)

Experiments and Quasi Experiments (Ch 11)

- Experiments with casual effects
- Differences and differences-in-differences estimators
- Quasi Experiments

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