BOSTON COLLEGE
Department of Economics

EC 771: Econometrics
Prof. Christopher Baum
Spring 2004
http://fmwww.bc.edu/EC-C/S2004/771/
Admin Bldg 486, 552–3673, baum@bc.edu
Hours: by arrangement; email anytime

Objectives: This course provides the required Ph.D. level introduction to econometric theory and methods. It takes as prerequisite the fundamentals of mathematics and mathematical statistics addressed in EC 770, and outlined in Appendices A, B, C and D of the textbook. EC 771 presents the fundamentals of OLS regression analysis and provides an introduction to several major techniques widely used in applied econometric work: the generalized method of moments, estimation of simultaneous equations, and selected panel data estimators. Some emphasis will also be placed on Monte Carlo experiments, bootstrapping and the analysis of large data sets. The course is designed to build a solid base of theoretical understanding, and exercise this theory with economic applications, providing a base of practical knowledge.

Required text: W. Greene (G), Econometric Analysis, 5th ed., 2003.

Course requirements: 40% final examination; 30% midterm examination; 30% graded homework assignments. No makeup examinations will be given, and homework assignments will not be accepted after their due dates. While it is recommended that you work together in groups and learn from each other, it is necessary that you attempt each problem–including empirical exercises–yourself, and turn in individual answers; group solutions are unacceptable. The Boston College policy on academic integrity appears at

http://www.bc.edu/bc_org/avp/enmgt/stserv/acd/univ.html#integrity

Homework assignments will require you to become familiar with the Stata statistical software, which is available on all departmental Mac OS X systems. You are expected to develop proficiency in elementary programming of this econometric package. Empirical assignments which develop intuition for applied econometric work as well as econometric programming skills are an important part of the course.

Schedule: The course will meet for 29 two–hour sessions, starting Tuesday 20 January through Thursday 6 May. The midterm is tentatively scheduled for Tuesday, 9 March.

Topics (not all chapter sections will be covered)

1. Monte Carlo simulation and bootstrapping   G App E.1-E.4
Stata v8 online help: simulate, bootstrap

2. Maximum likelihood estimation   G 17
Stata v8 online help for ml

3. Classical linear regression   G 2, 3

4. Properties of LS and IV estimators   G 4, 5

5. Inference and prediction   G 6

6. Functional form and structural change   G 7

7. GLS and GMM   G 10, 18

8. Heteroskedasticity and serial correlation   G 11,12

9. Systems estimation   G 14

10. Panel data estimators   G 13

11. Simultaneous equations models   G 16