

Wilfrid Laurier University
Waterloo, Ontario
Economics 655: Econometrics
FALL 2004

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Course Objectives

This course is designed to introduce students to some advanced econometric methods. While all students will have had some undergraduate econometrics training it is also advisable to keep an intermediate econometrics text on hand. Any intermediate econometrics text will do. Chapters 1 through 5 in, for example, the Stock-Watson text (*Introduction to Econometrics* Boston: Addison-Wesley, 2003) provides useful background material. Some time will be devoted to reviewing basic econometric issues, and to introduce the *Eviews 5* software (see below). Familiarity with the World Wide Web is also assumed. These lectures are NOT intended as a substitute for an intermediate econometrics course.

Econometric theory plays a background role in this course. While theoretical underpinnings are important to understand certain key concepts, and to motivate a particular technique, the focus of the course is to assist students in understanding how and when to use certain econometric methods, how to make inferences based on econometric estimates, and how to avoid *mis*-applying or misinterpreting econometric results. Hence, the “hands-on” application exercises are an important component of the course. *Eviews 5* is used throughout the graduate econometrics course. *Eviews 5* is a menu driven program with the possibility of creating your own programs to run in batch mode. It is available on the network on the X:\ drive, or you can purchase a student version (go to <http://www.eviews.com/> for pricing details. Please note that the student version is NOT able to perform many of the procedures used in class while the network version is).

While instruction on the *Eviews 5* program will take place through live class demonstrations throughout the course, the first two weeks is also devoted to introducing the software and, hopefully, making everyone comfortable with its principal features and uses. Therefore, two labs (these are scheduled beyond the usual classroom time) have been scheduled to introduce you to some of the essentials of using *Eviews 5*.

- LAB # 1: Thurs. Sept. 16 from 10:30 am - 12:00 pm in room N1055 (Science Building);
- LAB # 2: Thurs. Sept. 23 from 10:30 am - 12:00 pm in room N1055 (Science Building);

Attendance is mandatory: Failure to attend will result in a reduction of 5% of the total grade for each missed LAB.

You will find useful information about the course on the course web site such as past outlines, exams, practice exams, and other useful information

(go to <http://www.wlu.ca/~wwwsbe/faculty/psiklos/econ655.htm>).

Lecture Structure

Lectures and course work will essentially be divided into three parts: the economic and econometric issues of interest (THEORY); data related issues and replication (DATA); and econometric practice (APPLIED ECONOMETRICS). Students will be expected to apply a wide variety of econometric techniques in their course work. As noted above, a significant portion of every class is spent giving “live” examples on *Eviews 4.1*.

“LEGAL” STUFF

Wilfrid Laurier University uses software that can check for plagiarism. Students may be required to submit their written work in electronic form and have it checked for plagiarism.

You are reminded that the University will levy sanctions on students who are found to have committed, or have attempted to commit, acts of academic or research misconduct. You are expected to know what constitutes an academic offense, to avoid committing such offenses, and to take responsibility for your academic actions. For information on categories of offenses and types of penalty, please consult the relevant section of the Undergraduate Academic Calendar. If you need clarification of aspects of University policy on Academic and Research Misconduct, please consult your instructor.

Special needs:

Students with disabilities or special needs are advised to contact Laurier’s Special Needs Office for information regarding its services and resources. Students are encouraged to review the Calendar for information regarding all services available on campus.

FREQUENTLY ASKED QUESTIONS

1. *Can I ask whether a solution to a particular assignment question is “OK”?*

The simple answer is NO. You are, of course, free to ask any clarifying question or even whether a certain procedure is correct or not but I will not review your solution or program before hand. Otherwise there would be no point to having assignments. You are graduate students and part of your task is problem solving on your own. By all means, get together in groups to tackle problems.

2. *Are the practice questions and past exams on the course web page meant to prepare students for the final exam?*

YES. By the time you reach the end of the course you should rely on past exams, assignments, and practice questions to prepare for the exam. These materials are an accurate reflection of the length and level of difficulty you can expect on the final exam.

3. *Are Mondays and Fridays the only available office hours?*

I looked at your class schedules before choosing office hours. For simple or straightforward questions there is also e-mail.

4. *Will programming be required to answer assignment questions?*

YES. Not every question on the assignment can be answered by pointing and clicking your way through Eviews. You will have to learn how to write simple programs on your own and I will provide a basic introduction during the first lecture as well as through in class demonstrations.

5. *When is the final exam?*

A particular week is dedicated for the final exam (ask Randy Wigle or Leysa Ligaya for the exact dates). The econometrics exam will be the first exam this term.

6. *How similar is this year's course relative to last year's?*

There are always some changes to a course each year though the vast majority of the material is the same as last year's. I have made some changes to the structure of the course to spread out the work more evenly throughout the term, at least as far as that is possible.

7. *My econometrics background is weak. What should I do?*

Depending on how weak your background is you may have received some advance notice of this with a suggestion that you "bone up" on econometrics. In addition, the first couple of weeks are spent reviewing some undergraduate material, in part to help those who need to get up to speed, and the first assignment, while far from being comprehensive, is also meant to ensure that no one is left behind. However, it is your responsibility to be prepared for the course and to put in the extra time to be ready to digest more advanced material.

8. *There seems to be a lot of work for the assignments. Why?*

The only way to learn how to do econometrics is to work with data and write programs, and both activities can be quite time consuming. The amount of work demanded by this course is perhaps large in comparison with other courses. However, the techniques and material covered will make it *much* easier for you to prepare empirical papers for other courses, and especially for your "Economics 681 Paper". So you can think of the work in this course as, hopefully, creating "positive" externalities for the work you'll be doing for other courses.

TEXTBOOKS and OTHER DETAILS

A variety of sources are used in the course, including three textbooks (see list below). The Enders and Berndt texts are also available in the library. Only the Enders text is sold in the bookstore. The main text is Enders and you are encouraged to buy it.

E. Berndt, **The Practice of Econometrics** (Reading, Mass: Addison-Wesley, 1991)

W. Enders, **Applied Econometric Time Series, Second Edition** (New York: John Wiley and Sons, 2004).

Course Grading

There is no mid-term for the course. One of the assignments is due after the lectures end. See the schedule of due dates below.

Assignments (6 @ 10% each)	60%
Final exam (date and time TBA)	40%
Total	100%

Deadlines

Note: *NO* exceptions will be made unless the cause is a documented illness. In the case of illness, the weight of the assignment will be added to the weight of the final exam. **THERE IS A PENALTY OF 5 POINTS PER DAY FOR LATE SUBMISSION OF ASSIGNMENTS (WEEKENDS COUNT). ALL ASSIGNMENTS ARE DUE AT NOON ON THE DATES SHOWN BELOW.**

Assignment 1	October 8 FRIDAY
Assignment 2	October 29 FRIDAY
Assignment 3	November 12 FRIDAY
Assignment 4	November 19 FRIDAY
Assignment 5	December 3 FRIDAY
Assignment 6	December 13 MONDAY

Course Schedule

<i>Date</i>	<i>Week No.</i>	<i>Topic or Reference (Schedule is approximate; adjustments will be made as necessary)</i>
Sept. 15 +LAB # 1: 16 th	1	Berndt chapter 2 and 4
Sept. 22 + LAB # 2: 23 rd	2	Berndt chapter 10
Sept. 29	3	Berndt chapter 11
Oct. 6	4	Enders chapters 2 and 3 (Please review Enders chapter 1 <u>on your own</u>)
Oct. 13	5	Enders, chapter 2 and 3
Oct. 20	6	Enders chapter 4
Oct. 27	7	Enders, chapter 4
Nov. 3	8	Enders chapter 5
Nov. 10	9	Enders, chapter 5 ¹
Nov. 17	10	Enders, chapter 6
Nov. 24	11	Enders, chapter 6
Dec. 1	12	Enders, chapter 7
Dec. 8	13	Panel data: An Introduction ²

1 We shall also be considering an extension to the basic unit root/cointegration tests, as outlined in W. Enders and P.L. Siklos (2001), "Cointegration and Threshold Adjustment", *Journal of Business and Economic Statistics* 19 (April): 166-77.

2 Based on lecture notes given in class. A good reference is J.M Wooldridge (2003), *Introductory Econometrics*, Second Edition (Thomson Southwestern), chapters 13 and 14.

ASSIGNMENTS

Getting started. I would suggest that a good way to familiarize yourself with some of the basic properties of Eviews is to go to the Federal Reserve Bank of St. Louis' website (research.stlouisfed.org/publications/review/99/03/9903ps.dat) and download my paper in the March/April issue. See if you can replicate the results in Tables 1 through 3 of the paper. No marks, just the chance to see if you can embarrass your prof!. This data set will be used to introduce some of the features of Eviews 5 during lab sessions.

Important Instructions re: Assignments

All answers should be as concise as possible. This means that a minimum of computer output should be included showing how the work was done. Where possible, describe in words how a particular answer was obtained and use the Eviews feature which allows you to send essential Tables and graphs to word processing applications. All assignments should be sent via e-mail (disks are NOT acceptable) with files containing all the detailed work (and an explanation of their contents). The e-mail message should clearly indicate what information is being sent. Failure to follow these instructions will lead to a loss of marks determined by how much "useless" output is handed in!

Numbers in brackets indicate points for each question. Total for each assignment is 100.

Assignment # 1: Review & Basics (each exercise is worth 10 points, for a total of 90)

Berndt, chapter 2, Exercises 2, 6, 7 (Dupont and DOW cases only), 10

Berndt, chapter 4, Exercises 3 (omit part (e)), 6

Berndt, chapter 10, Exercise 3 (omit parts (e) and (f))

Berndt, chapter 11, Exercises 3 (omit parts (c), (d), (e), 6 (omit part (f))

Assignment # 2: Enders chapters 2, 3 (each question is worth 30 points for a total of 90)

Chapter 2, question 12

Chapter 3, questions 5, 10

Assignment #3: Enders chapter 4 (each question is worth 50 points for a total of 100)

Chapter 4, questions 6, 7

Assignment # 4: Enders, chapters 5 and 6 (each question is worth 30 points for a total of 90)

Chapter 5, questions 9 and 10

Chapter 6, question 4

Assignment # 5: Enders, chapter 7 (the question is worth 100 points)

Chapter 7, exercise 5

Replication exercise: replicate the results in W. Enders and P.L. Siklos (2001), “Cointegration and Threshold Adjustment”, *Journal of Business and Economic Statistics* 19 (April): 166-77, Table 7.

****NOTE****: YOU CANNOT USE THE EViews PROGRAM AVAILABLE ON MY HOME PAGE (UNDER CV. A COPY OF THE PAPER IS ALSO AVAILABLE THERE) BUT MUST CREATE A DIFFERENT ONE (ACTUALLY ONE CAN BE WRITTEN THAT IS EASIER TO USE THAN THE ONE ALREADY CREATED)

Assignment # 6: Panel Data (each question is worth 50 points for a total of 100)

Enders, chapter 4, question 8

Question 2: Using the “Big Mac” data set available on the course web site, construct a panel data set and estimate the following regression (use a maximum of 3 countries only):

$$s_{it} = \alpha_i + \beta p_{it} + \mu_{it}$$

where s is the log of the exchange rate, p is the log of consumer prices. *In the bigmac.wfl file, scountryname = exchange rate, and pcountryname = price level.*

All variables are to be evaluated relative to the US. The parameter of interest is β . What should the sign of β be? Why? Would you include a time trend? What type of panel estimation technique matter? Why? Explain your answer by providing a test for the presence of fixed effects.