Syllabus
Econometrics I– Advanced Econometric Theory 8110
TR 2:00-3:15
Sanford 204

Prof. Atkinson

Spring 2003

I. The Course: The course will cover panel data, M-estimation and algorithms, and MLE and GMM methods. We will use TSP for software – this is mandatory. There will be 3 projects in the course and a final. Habitually, one or two students do very well answering questions that I ask in class and figuring problems out on the spot, but do poorly on the exams. The grade will be derived as follows: 40% projects and 60% final. Class participation can add up to 10 extra points to your final grade. You will not receive a deduction for not participating.

Each day or fraction thereof a project is late beyond the date due results in a one grade reduction. There are no exceptions other than illness or a family emergency. Excuses for these problems must be obtained before the project is due. itemitem I expect you to come to class on time. DO NOT COME AFTER I BEGIN CLASS. A few seconds late is not a problem. Five minutes or more late is. If you have 4 unexcused misses I will drop you from the class.

II. Office hours: 503 Brooks Hall, MWF 1:00-2:00 & 3:30-4:30, and by appt. Web site: www.terry.uga.edu/economics/faculty.html

III. TEXTS REQUIRED:

1. Wooldridge, J. *Econometric Analysis of Cross-Section and Panel Data*, Boston: MIT Press, 2002.
2. Wooldridge, J. *Introductory Econometrics* 2nd ed., Thompson, 2003.
3. TSP manuals (2).

IV. TEXTS USEFUL:

1. Baltagi, Badi, H. *Econometric Analysis of Panel Data* John Wiley & Sons, 1995.
2. Davidson and MacKinnon (DM) *Estimation and Inference in Econometrics*, Oxford,1992.
3. Goldfeld and Quandt, *Nonlinear Methods in Econometrics*, North-Holland, 1972.
4. Greene, W.H. *Econometric Analysis*, MacMillan, 1992.
5. Hsiao, Cheng. *Analysis of Panel Data* , Cambridge Univ. Press, 2002.
6. Hayashi, Fumio, *Econometrics*, Princeton: Princeton Univ. Press, 2000.
7. *Handbook of Econometrics*, vol. I-V, Z. Griliches and M. Intrilligator eds., New York: North-Holland, 1983.

8. Matyas, L. and P. Sevestre, eds., *The Econometrics of Panel Data: A Handbook of Theory and Applications*, Kluwer Academic Publishers, 1996.

9. Myoung-jae Lee, *Panel Data Econometrics*, New York: Academic Press, 2002.

10. An excellent new text by Kenneth Train on Discrete Choice Simulation is online at http://elsa.berkeley.edu/books/train1201.pdf. It is called *Discrete Choice Methods with Simulation* and will be published by Cambridge U. Press in 2003.

    COMMENTARY: All the above texts are excellent references. Train and Goldfeld and Quandt are very good for algorithms. The Myoung-jae Lee book (2002) is very good for panel data treatments and is a useful supplement to Wooldridge. Hayashi (2000) and Wooldridge rate as clearly the best textbooks. While Hayashi is much more involved with time series econometrics, try to read both on relevant topics.

V. Prerequisites

1. Econometrics – 8070 and 8080.

2. You should also know calculus, matrix algebra, and mathematical statistics through material covered in a text such as Mood, Graybill, and Boes.

VI. COURSE OUTLINE

Data for all projects can be found at:

http://www.msu.edu/ ec/faculty/wooldridge/book2.htmp

Note: Always find the relevant material in Wooldridge, *Introductory* to read with each topic listed :

| Week | Starts | Topic |
|---|---|---|
| 1-2 | 1/9 | TOPIC #1: CATCH UP–Count Data and Failure Time Models<br>Wooldridge, Chs. 19, 20. |
| 3-7 | 1/20 | TOPIC #2: PANEL DATA<br>Wooldridge (2002), 10, parts of 11, and the<br>panel parts of 15-20.<br>Greene, 14<br>Lee as needed<br>Arelano and Honoré, "Panel Data Models |

Some Recent Developments" Handbook
of Econometrics, Vol. 5 North Holland, 2002.

Ahn, S.C. and P. Schmidt, "Efficient Estimation
of Models for Dynamic Panel Data",
*Journal of Econometrics* 68 (1995)

Ahn, S.C. and P. Schmidt, "Efficient Estimation
of Dynamic Panel Data Models: Alternative",
Assumptions and Simplified Estimation",
*Journal of Econometrics* 76 (1997)

Arellano, M. and S. Bond, "Some Tests of Specification for
Panel Data: Monte Carlo Evidence and an Application to
Employment", *Review of Economic Studies* 58 (1991)

Arellano, M. and O. Bover, "Another Look at the
Instrumental Variable Estimation of Error-Components
Models", *Journal of Econometrics* 68 (1995)

Blundell, R. and S. Bond, "Initial Conditions and Moment
Restrictions in Dynamic Panel Data Models",
*Journal of Econometrics* 87 (1998)

Lancaster, T., "The Incidental Parameter Problem Since 1948",
*Journal of Econometrics* 95 (2000)

Bond, S., "Dynamic Panel Data Models: A Guide",
to Micro Data Methods and Practice",
*CEMMAP Working Paper CWP09/02* (2002)

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|---|---|---|
| | 2/11 | PROJECT #1 DUE |
| 8-13 | 2/24 | TOPIC #2: M ESTIMATION AND ALGORITHMS– |

Hayashi, 7
Wooldridge, 12
Train, 8

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|---|---|---|
| 11 | 3/17 | SPRING BREAK |
| | 3/28 | PROJECT #3 DUE |
| 14-18 | 3/31 | TOPIC #3: MLE AND GMM |

Review Simultaneous Eqs. and IV
Wooldridge, 13 & 14
Hayashi, 3,4, & 8

Greene, 16 & 8

Stock, J., J. Wright, and M. Yogo, "A Survey of Weak Instruments and Weak Identification in Generalized Method of Moments Estimation", *JBES* 20 (2002).

Andrews, D. "Consistent Moment Selection Procedures for Generalized Method of Moments Estimation", *Econometrica* 67 (1999).

Hahn, J. and J. Hausman, "A New Specification Test for the Validity of Instrumental Variables", *Econometrica* 70 (2002).

Hansen, L. P.,"Large Sample Properites of Generalized Method of Moments", *Econometrica* 50 (1982).

Donald, S. G. and W.K. Newey, "Choosing the Number of Instrumental Variables ", *Econometrica* 69 (2001).

5/1 PROJECT #3 DUE

5/1 LAST DAY OF CLASSES

5/5 FINAL EXAM 5/5 (MON) 3:30–6:30