International Economics

Academic year 2019-2020

Econometrics II

EI062 - Printemps - 6 ECTS

Monday 14h15 - 16h00

Course Description

The objective of this course is to provide students who have taken their required classes in theoretical econometrics hands-on experience of empirical research. Econometrics II is for 1st year MIS students. The course will cover specific topics (identification, instrumental variables, duration models, binary choice and multi-response models, sample selection models, count models, panel data, parameter heterogeneity, and univariate and multivariate time series analysis). Rather than proving theorems, the course will focus on the intuition and practical applications of the various econometric techniques. Homework assignments will require the use of Stata.

> **PROFESSOR**

Ugo Panizza

Office hours

> **ASSISTANT**

Hayley Marie Pallan

Office hours

Syllabus

Grading

Each part of the course contributes to 50% of the final grade. For each part of the course, the grade will be based on homework assignments (30%) and a closed book exam (70%). The following exceptions to this grading scheme will apply: (i) Students with an average above 5.9 in the written exams will receive a 6 no matter what their total average is, and (ii) students with an average below 3.5 in the written exams will receive a 3.5 and fail the course, no matter what their total grade is.

PART I: Macroeconometrics

Textbooks

For the time series part we will use Walter Enders (2011) *Applied Econometric Time Series*, 3rd edition (previous editions are fine).

OUTLINE

<u>Lecture 1</u> (February 17)
Forecasting with univariate stationary time series model (ARMA)
<u>Required readings</u>:
- ENDERS Ch. 2.
- Diebold, Francis .X., 1998, "The Past and Present of Macroeconomic Forecasting," *Journal of Economic Perspectives*, 12, 175-192

<u>Lecture 2</u> (February 24)
Non-stationary time series
<u>Required readings</u>:
- ENDERS Ch. 4.
- Campbell, John Y and N Gregory Mankiw, 1987. "Are Output Fluctuations Transitory?" The *Quarterly Journal of Economics*, vol. 102(4), 857-80.

<u>Lectures 3&4</u> (March 2-9)
Multiequation time series models (VAR)
<u>Required readings</u>:
- ENDERS Ch. 5.
- Stock, James H. and Mark W. Watson, 2001. "Vector Autoregressions", *Journal of Economic Perspectives*, Vol. 15(4), 101-115
- Eric M. Leeper, Christopher A. Sims, and Tao Zha (1996) What Does Monetary Policy Do? *Brookings Papers on Economic Activity*.

<u>Lecture 5</u> (March 16)
Cointegration and Error Correction Models (ECM)
<u>Required readings</u>:
- ENDERS Ch. 6.
- Alan M. Taylor and Mark P. Taylor, 2004."The Purchasing Power Parity Debate," *Journal of Economic Perspectives*, vol. 18(4), 135-158.
- Campbell, John Y and Shiller, Robert J, 1991."Yield Spreads and Interest Rate Movements: A Bird's Eye View," *Review of Economic Studies*, vol. 58(3), 495-514.

<u>Lecture 6</u> (March 23)
Modeling volatility: ARCH/GARCH models
<u>Required readings</u>:
- ENDERS Ch. 3.
- Francis X. Diebold, 2004. "The Nobel Memorial Prize for Robert F. Engle," *Scandinavian Journal of Economics* 106(2), 165–185.

<u>Lecture 7</u> (March 30)
Dynamic Panel data techniques, with a flash review of panel data
<u>Required readings</u>:
- Wooldridge (Chapter 10)
- Stephen Bond (2002) "Dynamic panel data models: a guide to micro data methods and practice" Portuguese Economic Journal, 1:141-162

<u>Lecture 8</u> (April 6)
Exam

PART II: Microeconometrics

Textbooks

The microeconometrics part of the course does not follow a specific textbook, but two good references are:
- Wooldridge, J. (2001), *Econometric Analysis of Cross-Section and Panel Data*. MIT Press, Cambridge, MA.
- Cameron, A. C., and P. K. Trivedi (2005), *Microeconometrics: Methods and Applications*. Cambridge University Press, New York, NY.

OUTLINE

Lecture 9 (April 20)
Maximum Likelihood Estimation and Binary Choice Models (logit; probit; cloglog, gompit)
Required readings
- Ai, C. and E. Norton (2003), Interaction terms in logit and probit models, *Economic Letters*, 80, 123-129.
  And one of the two:
- Wooldridge, J. (2001), *Econometric Analysis of Cross-Section and Panel Data*. MIT Press, Cambridge, MA. Chapter 13 and 15.
- Cameron, A. C., and P. K. Trivedi (2005), *Microeconometrics: Methods and Applications*. Cambridge University Press, New York, NY. Chapters 5 and 14.

Lecture 10 (April 27)
Multi-Response Models (multinomial logit, conditional and ordered logit) and Sample Selection Models (tobit)
Required readings (one of the two):
- Wooldridge, J. (2001), *Econometric Analysis of Cross-Section and Panel Data*. MIT Press, Cambridge, MA. Chapters 15 and 17.
- Cameron, A. C., and P. K. Trivedi (2005), *Microeconometrics: Methods and Applications*. Cambridge University Press, New York, NY. Chapters 15 and 16.

Lecture 11 (May 4)
Sample Selection Models (tobit II and heckman 2-step estimator) and Count Models (poisson and negative binomial)
Required readings (one of the two):
- Wooldridge, J. (2001), *Econometric Analysis of Cross-Section and Panel Data*. MIT Press, Cambridge, MA. Chapters 17 and 19.
- Cameron, A. C., and P. K. Trivedi (2005), *Microeconometrics: Methods and Applications*. Cambridge University Press, New York, NY. Chapters 16 and 20.

Lecture 12 (May 11)
Weak Instruments
Required readings:
- Wooldridge, J. (2001), *Econometric Analysis of Cross-Section and Panel Data*. MIT Press, Cambridge, MA. Chapters 5 and 6.

- Angrist, J., G. Imbens and D. Rubin (1996), Identification of Causal Effects Using Instrumental Variables, *Journal of the American Statistical Association*, 91(434), pp. 444-455.
- Angrist, J. and A. Krueger (1991), Does Compulsory School Attendance Affect Schooling and Earnings? *Quarterly Journal of Economics*, 106, pp. 979-1014.
- Bound, J., D. Jaeger and R. Baker (1995), Problems with Instrumental Variables Estimation when the Correlation between the Instruments and the Endogenous Explanatory Variable is Weak, *Journal of the American Statistical Association, 90(430), pp. 443-450.*

Optional readings
- Cameron, A. C., and P. K. Trivedi (2005), *Microeconometrics: Methods and Applications*. Cambridge University Press, New York, NY. Chapters 4 and 6.
- *Stock, J., J. Wright, and M. Yogo (2002), A Survey of Weak Instruments and Weak Identification in Generalized Methods of Moments, Journal of Business and Economic Statistics, 20(4), 518-529.*
- Hahn, J., and J. Hausman (2003), Weak Instruments: Diagnosis and Cures in Empirical Econometrics, *American Economic Review*, 93(2), 118-125.
- Cruz, L.M. and Moreira, J. (2005), On the Validity of Econometric Techniques with Weak Instruments. Inference on Returns to Education Using Compulsory School Attendance Laws, *Journal of Human Resources*, 40(2), 393-410.

Lecture 13 (May 18)
TBA

Lecture 14 (May 25)
Exam