

ECON 469

Econometrics 2 - Honours

Department of Economics
McGill University
Winter 2024

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Office hours: Monday, 2.45pm-3.45pm.

Regular classes: Monday and Wednesday 8.35am-9.55am.

Course Overview and Learning Outcomes

This class is a continuation of ECON 468. The first part of the class deals with linear regression models for two types of data structures that deviate from the classical cross section regressions (which are the focus of ECON 468): time series regressions and panel regression models. Because we will focus on linear models, the statistical properties of the estimators follow easily from the linear regression model theory seen in ECON 468.

The second part of this course focuses on IV/GMM methods for general nonlinear models. Time permitting, we will also study some applications of maximum likelihood estimators. These include nonlinear regression models and limited dependent variable models such as the logit and probit models.

Course Materials

The lectures will be based on material from the following textbooks. Presentation slides will be made available to students after each topic and I will provide more precise references as we go along.

“Introductory Econometrics: a Modern Approach”, by Jeffrey Wooldridge

“Econometric Theory and Methods, by Russell Davidson and James MacKinnon

Course Content

1. Time series regressions
 - (a) Static and finite distributed lag models
 - (b) Finite sample and asymptotic properties of OLS
 - (c) HAC standard errors
 - (d) Unit root processes
 - (e) Forecasting
2. Panel regressions
 - (a) Pooled regressions
 - (b) First differences estimator
 - (c) Fixed effects estimator
 - (d) Random effects estimator
3. Generalized method of moments
 - (a) Overidentified linear model
 - (b) Asymptotic distribution of GMM in linear model
 - (c) GMM: the general case
4. Maximum likelihood estimation (time permitting)
 - (a) Basic concepts
 - (b) Applications of MLE: nonlinear regression and limited dependent variable models

Evaluation

The final grade for the course will be based on:

1. Two problem sets (25%)
2. Midterm exam (30%) on **February 28, 2024** during regular class time, based upon the material covered until then.
3. Final exam (45%), covering all the material. This exam is also mandatory.

Notes:

- The weighting cannot be changed on the basis of performance. The weight of the midterm can be moved to the final only via properly justified (e.g. medical note) absences. Absences to the final exam also need to be properly justified, and need to be followed-up by an official request for a deferral on Minerva.

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