NATIONAL TAIWAN UNIVERSITY
Department of Finance

ECONOMETRIC THEORY II

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This is the second course in econometric theory for Ph.D. students; well prepared Master students are also welcome to take this course. As a prerequisite, students are expected to have completed Econometric Theory I at Ph.D. level or something equivalent. In this course, we will follow my own lecture notes and focus on three leading econometric methods: nonlinear least squares method, quasi-maximum likelihood method, and generalized method of moment. As in the first course, I will not provide "recipes" for these methods. Instead, I hope students will learn from this course *how* an econometric method is derived and *why* it works. All lectures will be in English; students are encouraged to participate classroom discussion which is a crucial part of the Ph.D. training.

Reading

1. Cameron, A. Colin and P. K. Trivedi, *Microeconometrics: Methods and Applications*, New York, NY: Cambridge University Press, 2005.

2. Lecture notes, available at **ceiba.ntu.edu.tw/982econometrics2**, or **homepage.ntu.edu.tw/~ckuan**; please constantly check for new versions.

3. White, H., *Estimation, Inference and Specification Analysis*, New York, NY: Cambridge University Press, 1994.

Supplemental Reading

1. Davidson, R. and J. G. MacKinnon, *Estimation and Inference in Econometrics*, New York, NY: Oxford University Press, 1993.

2. Greene, W. H., *Econometric Analysis*, 6th ed., Upper Saddle River, NJ: Pearson Prentice Hall, 2008.

3. Hamilton, J., *Time Series Analysis*, Princeton, NJ: Princeton University Press, 1994.

Course Outline

1. Review of the Least Squares Theory

2. Nonlinear Least Squares (NLS) Theory

   2.1 Nonlinear specifications

   2.2 NLS estimator

Office Hours: Wednesday 3–5 or by appointment.

Grading: Homework (15%), midterm (40%), and final (45%).