# **ECON 546: Themes in Econometrics**

### Spring, 2010

### **Arrangements for Projects**

- *Due Date*: 15 April, 5 p.m.
- *Weight*: 20% of the final grade for this course.
- *Overview*: The purpose of these projects is to give you the opportunity to apply or extend one or more of the techniques that are covered in the course. There are two broad types of projects that you can consider:
- (i) An empirical application, using real data, and using one or more of the general estimation/testing principles that we have discussed.
- (ii) A Monte Carlo or Bootstrap simulation experiment to investigate the finitesample properties of an estimator or test of a type that we usually justify in terms of its asymptotic features.
- *Teamwork*: You may undertake an individual project, or work in pairs. In the latter case, the assigned grade will be allocated to each member of the pair, on the assumption that each has contributed equally to the project. If this assumption is not justified, both team members should discuss the matter with the instructor before the project is submitted.
- *Computing*: You may use the EViews, SHAZAM or STATA packages, or any other software (such as R, WinBUGS, Gauss or MATLAB) approved by the instructor. Your submitted report should include enough detail for the grader to be able to see exactly how your results were obtained. The computer code and data files should be supplied on a diskette. In other words, the grader should be able to fully replicate your results, if need be.
- *Format*: Your project should be written up in report form. It may be typed or legibly hand written. The overall length is not especially important, but the report should include the following:
- (i) An introduction that outlines the objectives of your study.
- (ii) A review of any relevant background literature.
- (iii) A discussion of any data that are being used.
- (iv) A description of the estimation/testing techniques that are employed.
- (v) A careful presentation of the results, including tables and charts, as appropriate.
- (vi) A discussion of the implications of these results.
- (vii) A short "Conclusions" section this might also indicate some possible directions for further research.
- (viii) A properly constructed Bibliography or References section

Marks will be allocated for content, clarity of exposition, and accuracy of the interpretation of the results.

Some illustrative topics are provided below, but you are encouraged to propose a topic of your own choosing. In this case, please discuss it briefly with the instructor before you commence your work, to ascertain its suitability and to ensure that any necessary data are readily available.

**Examples:** The following topics are merely illustrative of what would be suitable. You don't have to choose one of these topics. You will be expected to research the background literature and formulate a precise research plan. Recent issues of the journals Applied Economics, Applied Economics Letters, Applied Financial Economics, and Applied Financial Economics Letters will also provide you with a lot of good ideas. Each of these journals is available online through the UVic Library at http://ejournals.library.uvic.ca/.

## (A) <u>Type (i)</u>

- (a) Modelling the winning margins in hockey games or baseball games.
- (b) Application of "count data" modeling to financial crises.
- (c) Maximum Likelihood or Bayesian modelling of extremes in economic data.
- (d) Testing for asymmetries and non-linearities in the GDP for Canadian Provinces.
- (e) Estimation of a consumer demand system.
- (f) A simultaneous equations analysis of the effect of inflation on savings in Canada.
- (g) A "count data" model of drinking habits in Canada.

## (B) <u>Type (ii)</u>

- (a) A comparison of the finite-sample size-distortions and powers of different forms of the Wald test for non-linear restrictions in a regression model.
- (b) An examination of the finite-sample properties of a simple "preliminary-test estimator" under alternative risk functions.
- (c) A study of the finite-sample power of the Likelihood Ratio test for functional form in the context of the Box-Cox model.
- (d) Combining different estimators how does this affect estimator "risk"?
- (e) An analysis of the finite-sample properties of the Box-Cox estimator.
- (f) An investigation of the finite-sample properties of MLE's for regression models with "count" data.
- (g) An analysis of the finite sample properties of different estimators for "errors-in-variables" models.

#### **Presentations:**

Each individual or pair working on a project will make a brief presentation of their results. This presentation will be taken into account in assessing the project work as a whole. The final class of the course (on Thursday 8 April) will be set aside for this purpose. Comments that are received at the presentation may be taken into account before the project is submitted for grading on 15 April.