

Economics 7828 - Econometrics  
Spring 2010

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Economics 7828 is a course in intermediate econometrics for PhD students. Building upon the statistical foundations presented in 7818, this course covers both theoretical and applied aspects of econometrics.

background literature relevant to your project. This can be done in two or three pages. This proposal is due on Thursday, February 18. You are invited to discuss your ideas with me at any time during the development of your project. One purpose of this proposal is to have you identify your data sources early in the term so that you will not be caught later in the semester with a project that is not feasible for lack of data.

Once we have agreed on a project you should collect the necessary data and proceed with the estimation. In estimating your model there may be several variants you will try (alternative functional forms, differing variable definitions, alternative lag structures, alternative estimation techniques etc.). You will also certainly encounter various econometric problems. An important part of your assignment is to test for the presence of econometric problems (autocorrelation, heteroscedasticity, multicollinearity, etc.) and to deal with these problems using procedures you will learn in the course. The evaluation of your project will reflect, in part, your skill in handling these econometric problems, and your use and interpretation of variants of your basic model.

When you have completed your estimation, you should prepare your final report following the format of empirical articles in economics journals. Typically these papers include the following:

1. Introductory overview of the research question; statement of objectives.
2. Presentation of theory and review of relevant theoretical literature.
3. Discussion of previous empirical work in the area; critique and explanation of why your approach is vastly superior, or at least different.
4. Specification of your model(s) to be estimated; variable definitions and description of data sources.
5. Presentation of results: estimated equations and summary statistics; results of tests of econometric problems and description of corrective actions taken; results of statistical tests of hypotheses; comparison with other studies.
6. Discussion and conclusion; elaborate on the implications of your results for theory and policy; draw as much substantive content as possible from interpretations of your estimates and tests of hypothesis; present suggestions for further research (now that I have done all this work, this is how I would do it right).
7. Bibliography; list your data sources and any literature that you have cited in the paper. Keep in mind that any text or mathematical derivations that have been copied from other sources must be identified with quotation marks and given appropriate references. Quoted text should be kept to a minimum; most of the writing should be your own. When you have relied on other works for ideas (e.g., models, explanations, interpretations, etc.) these sources must be given credit also.

Your final paper is due on Friday, April 23. Include with your written paper the computer printouts of your most important results, with some guide to the output in your text. Late papers will be penalized by 10 percentage points if I receive it before I must post grades, and by 20 percentage points if it is any later.

## Readings and Topics

Text: Greene, William H. *Econometric Analysis* Fifth Edition (2003) or Sixth Edition (2008) Prentice Hall.

I. Classical Linear Regression: least squares estimation, properties of estimators, and simple tests of hypotheses. [5<sup>th</sup> edition: Chapters 1-4; Chapter 5 (sections 5.1 & 5.2). 6<sup>th</sup> edition: Chapters 1-4]

II. Tests of general linear restrictions, dummy variables, and functional forms. [5<sup>th</sup> edition: Chapter 6 (sections 6.1-6.4), chapter 7 (sections 7.1-7.4). 6<sup>th</sup> edition: chapter 5 (sections 5.1 – 5.4), chapter 6.]

III. Specification error. [5<sup>th</sup> edition: Chapter 8 (sections 8.1-8.2) 6<sup>th</sup> edition: chapter 7 (sections 7.1 – 7.2)].

IV. Generalized Linear Model & Heteroscedasticity. [5<sup>th</sup> edition: Chapters 10 and 11 (sections 11.1 – 11.7)]. 6<sup>th</sup> edition: Chapter 8]

**Midterm Examination - March 9**

## Syllabus Addendum