

Economics 7828 - Econometrics  
Spring 2012

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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. Economics 7818 is the prerequisite for this course, which requires a solid background in mathematical statistics and matrix algebra. Our text also presents a brief summary of the essentials of matrix algebra and statistics in appendices A and B.

You will be actively working with computers in this course. Computer exercises and instruction are provided for the EViews econometrics package that is available on our PC network. These exercises are designed to illustrate the use of an econometric software package and to develop skills in the application of econometric tests and procedures to economic data. Instructions and data sets for these exercises will be accessible from the Desire2Learn site for our class. Complete inst

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 likely encounter various econometric problems or be involved with advanced estimation procedures (panel data methods, logit-probit models, instrumental variables estimation, etc.). An important part of your assignment is dealing with econometric problems (autocorrelation, heteroscedasticity, multicollinearity, etc.) or implementing advanced estimation procedures. In some cases we will not have covered your econometric method before you need to proceed with the estimation, so you will need to read about this topic on your own. The evaluation of your project will reflect, in part, your skill in handling these econometric problems, the sophistication of the analysis, and your interpretation and testing 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,

## Readings and Topics

Text: Verbeek, Marno (2008) , 3<sup>rd</sup> edition. Wiley.

0. Introduction: some econometrics controversies [Chapter 1; Readings: “Housing Experiment” and “Cause and Defect”]

I. Classical Linear Regression: least squares estimation, properties of estimators, and tests of simple hypotheses and general linear restrictions; alternative functional forms; dummy variables. [Chapters 2 and 3]. In class we will develop the econometric theory of

## Syllabus Addendum