GENERAL BUSINESS 806

LONGITUDINAL AND PANEL DATA: ANALYSIS AND APPLICATIONS

FALL, 2006

Electronic mail address (Email): jfrees@bus.wisc.edu

OFFICE HOURS: MW 1:30-2:30 pm and by appointment

I am in my office more frequently than these hours might suggest. Please feel free to visit in the afternoons whenever you find me in the office. I urge you to make an appointment to see me if you have something important to discuss and you find these times inconvenient.

REQUIRED TEXT:  

PRIMARY REFERENCES: It can be useful to get an additional perspective on this important material. Here are two recommended texts:

ADDITIONAL KEY REFERENCES:

COURSE OBJECTIVES: This course is intended to cover an area of applied statistics, longitudinal and panel data models. The subject matter is advanced in the sense that it is based on
- a course in the foundations of statistics,
- a course in regression analysis and
- familiarity with matrix algebra.

One goal of the course is to make everyone familiar with the basic methodology and basic data analysis considerations for panel data. Further, I hope that you will find that there is enough
flexibility built into the schedule so that you have an opportunity to develop your own area of interest.

Specifically, I intend to:
• enable graduate social science students to perform empirical research using panel data models,
• provide an overview of the econometric and biostatistics literature with an applications orientation and
• emphasize data exploration, diagnostics and model selection techniques.

METHOD: The main teaching method is lecture combined with class discussion. For the first two thirds of the course, we will be going over the basic material described in the Course Outline. Further, you will occasionally be asked to present a topic to your classmates. This will usually be in the form of a brief summary of a paper that you have written. This is designed to give you some experience in presenting technical material to your peers.

WORLD WIDE WEB: This semester, I am continuing to develop a Web site of the course. The URL (uniform resource locator) is "http://instruction.bus.wisc.edu/jfrees/genbus806/". I have put most of the text material on my research web site “http://research.bus.wisc.edu/jfrees/”.

These pages contain:
1. Some overview material for the course.
2. The syllabus, if you lose yours.
3. My lecture overheads.
4. The data for the course. These are in SAS, Excel and ASCII (text) format.
5. Sample SAS, R and Stata programs. I will hand out and discuss the programs in class. I expect that you will replicate this work in your homework assignments and class projects. When you get it from the Web site, you will not need to re-key the code.
6. Links to my panel data working papers.

EVALUATION: There will be several homework assignments and two papers, weighted as follows:

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<td>Paper 1</td>
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<td>Paper 2 and Presentation</td>
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<td>Homework Assignments</td>
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The main purpose of the homework assignments is for you to develop your understanding of panel data modeling at your own pace. Some assignments will be theory-driven; some will be empirically oriented. You must complete the full assignment to the satisfaction of me and the grader. Otherwise, I will turn it back to you and ask you to re-do it. I will give roughly four theoretical and four empirical assignments over the course of the semester. You need not
complete all of the assignments! You need only complete six assignments. For the empirical assignments, the data are up on the research web site.

The main purpose of the papers is to allow you to develop your own area of interest in panel data. The first paper will be a review of the literature. In this paper, you will do a critical review of a paper in the literature on either an application of panel data or a methodological development in panel data. This will be due around the eighth week. The second paper will be an analysis of a data set of your choosing. You may do this individually although I will encourage you to work with a classmate. The data set need not be original although I expect your analysis to be your own.


**COURSE OUTLINE:**

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<thead>
<tr>
<th>Number of Lectures</th>
<th>Chapter</th>
<th>Topic</th>
<th>Additional Suggested Readings</th>
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<td>2</td>
<td>Fixed effects models</td>
<td>2, 3.1-3.2, 3.7, 3.8, 6.1, 6.2</td>
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<td>Prediction and Bayesian inference</td>
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<td>Random regressors</td>
<td>3.4, 5, 6.2.2.e, 8.3</td>
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<td>7</td>
<td>Modeling issues</td>
<td>3.4, 3.5, 9.2</td>
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<td>Dynamic models</td>
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<td>Generalized linear models</td>
<td>7, 8.4, 9.4, 11</td>
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<tr>
<td>2</td>
<td>11</td>
<td>Categorical Dependent Variables</td>
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*Raudenbush and Bryk (2002) provide a good book-long introduction to multilevel models.*

This totals 29 lectures. Still, I’d like your input on potential topics.