Empirical Methods in Corporate Finance
Finance 926
(Tentative) 2010 Syllabus

INFORMATION
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PREREQUISITES
You should have taken a graduate sequence in econometrics. Practically speaking, you should be comfortable with econometrics at the level of William Greene’s *Econometric Analysis* and Jeffrey Wooldridge’s *Econometric Analysis of Cross-Section and Panel Data*. The course will actually cover a fair amount of ground in the latter text but I expect students to be comfortable with the general concepts if not the specific details.

GOALS
Provide students with a toolbox and working knowledge of microeconometric empirical methods for use in corporate finance research. What does this mean? The “toolbox” refers to a variety of methods commonly employed in empirical research – not all but a good sample of existing and recent econometric techniques.

The “working knowledge” means that you are going to learn these methods via a three-pronged approach. First, you will learn the econometric intuition behind each method. This will be accomplished by lectures and “light” econometrics readings. This is not a theory course so well will not be spending time deriving asymptotic properties of estimators or searching for UMP hypothesis tests. This is a course for end-users of econometric tools and you don’t need to know how to build the tool in order to use it. However, you will learn how to use each tool properly.

Second, you will see these methods implemented by other researchers in published papers. I will rely on examples from corporate finance when possible, though I will also reference examples from other fields in economics including: labor, industrial organization, and public finance. Students will be required to read and potentially present a paper that illustrates the empirical method in a (short) seminar-like setting. This exercise will not only reinforce your understanding of the material but it will also give you practice in presenting to an audience.

Finally, you will implement each method on live data – learning by doing. There will be a number of empirical exercises that will require you to manipulate and analyze data using the various econometric techniques. Since this is technically a finance course, the data and applications will typically be corporate finance related.
The “microeconometric” means that we will focus on cross-sectional and panel data methods, as opposed to time-series techniques.

LIMITATIONS

Practical limitations (i.e., time) impose certain restrictions on what we can accomplish in this course. For example, we will not cover all of the methods you might need or should know. I have listed a few such topics at the bottom of the syllabus. We also will not cover each method in excruciating detail. Arguably, you could build an entire course (research agenda) around each method. Finally, this course will not train you to do theoretical research in any of the particular topics.

MATERIALS

I will teach from slides, which I will make available to you (hopefully) before each class. I will be drawing from a variety of sources including various textbooks, journal articles, and working papers. As such, there is no required text but I will make note of the appropriate references for each module.

Some of the texts to which I refer below are:


Greene’s Econometric Analysis is a nice alternative.

There is also an extensive reading list that accompanies this syllabus. You should feel free to peruse and read papers that fit your interest.

COURSE OUTLINE

1. Linear Regression

   (This will be a fast paced refresher on linear regression focusing on intuition and interpretation. It will also introduce students to a number of different literatures by way of an older visible paper, many, but not all, of which use linear regression. Additional studies can be found in the reference list for the course.)

   a. Univariate OLS
   b. Multivariate OLS
   c. Specification
   d. Inference
   e. Readings:
      i. Methods
         1. Ch. 4 of Wooldridge.
      ii. Capital Structure
iii. Investment and Financing Frictions

iv. Dividends

v. Product Market Competition and Finance

vi. Bank Lending and Balance Sheet Channels of Monetary Policy

vii. The Stock Market and Investment

viii. The Diversification Discount

ix. Costs of Financial Distress

x. Corporate Liquidity

xi. Corporate Ownership

xii. Boards of Directors

xiii. Banking

xiv. Buyouts

xv. Executive Compensation

xvi. Law and Finance

xvii. Risk Management

2. **Linear Panel Data Models**
   a. Pooled OLS
   b. Fixed Effects
   c. Random Effects
d. Dynamic Linear Panel Data Models
   i. MLE
   ii. GMM
e. Readings:
   i. Methods:
   3. Ch. 5 in: Angrist and Pischke
   4. Ch. 10 in: Wooldridge
   ii. Capital Structure:

3. **Nonparametric Methods**
   a. Density estimators
   b. Regression Estimators
c. Readings:
   i. Methods

4. **Causality**
   a. Potential Outcomes Notation and the Rubin Causal Model
   b. Selection Biases

5. **Instrumental Variables**
   a. Motivation
   b. Estimation
   c. Checking Internal Validity
   d. Readings:
      i. Methods
         2. Chapter 4 in: Angrist and Pischke.
      ii. Banking
      iii. Corporate Ownership
      iv. Security Design
      v. Capital Structure

6. **Natural Experiments**
   a. Motivation
   b. Estimation of Treatment Effects
   c. Checking Internal Validity
   d. Readings:
      i. Methods
         1. Ch. 5, Angrist and Pischke.


ii. Financing Constraints:

iii. Capital Market Segmentation

iv. Banking and Corporate Behavior:
3. Paravisini, Daniel, 2008, Local bank financial constraints and firm access to external finance, *Journal of Finance* 63,

v. Agency Theory and Corporate Behavior:

vi. Taxes, Transaction Costs and Stock prices:

vii. Law and Finance:

7. **Regression Discontinuity Design**
   a. Motivation
   b. Estimation of Treatment Effects
   c. Checking Internal Validity
   d. Readings:
i. Methods:

ii. Corporate Investment:

iii. Banking and Securitization:

iv. Capital Structure:

8. Matching Methods
a. Motivation
b. Estimation of Treatment Effects
c. Checking Internal Validity
d. Readings:
i. Villalonga, Bellen, 2004,
ii. Li and Zhao, 2005

9. Discrete Choice Models
a. Bivariate Models
b. Multivariate Models
c. Readings
i. Methods
   1. Ch. 15, Wooldridge

ii. Contract Renegotiation

iii. Estimating Demand Systems
   1. Mackinlay, Andrew, 2010,

10. Duration Models
   a. Nonparametric Methods
   b. Semiparametric Methods
   c. Parametric Methods
   d. Readings:
      i. Method:
      ii. Capital Structure:
         1. Leary and Roberts, 2005, *Do firms rebalance their capital structures?*, *Journal of Finance*, 60(6), 2575-2619
      iii. Corporate Investment:

11. Topics
   a. Bootstrap & Jackknife
   b. SMM