Empirical Analysis III: Econometric Modeling and Forecasting (Econ 645)

Spring 2015  
Wednesday, 6:45-9:30 pm, with a 15 minute break sometime between 7:45-8:30

Instructor: Naomi Feldman  
Email: naomi.e.feldman@frb.gov

Pre-requisites: Econ 644

Office hours: Before and after class. I generally arrive about 30 minutes early to class so you can find me then. If you want to be absolutely certain that we meet, best to drop me an email to confirm. I’ll stay after class for as long as needed.

Required Textbook: Introductory Econometrics: A Modern Approach by Jeffery Wooldridge (you don’t necessarily need the latest version, any of the last few versions will do)

Also useful: Mostly Harmless Econometrics by Angrist and Pischke

Data Management Using Stata: A Practical Handbook by Michael Mitchell

Helpful Stata resource: http://www.ats.ucla.edu/stat/stata/

Course Objectives: This course is a study of empirical techniques that are particularly relevant to the analysis of microeconomic models. The first half of this course will deal with practical solutions to dealing with variables that are not considered exogenous. In the second half we will first address empirical techniques that take into account dependent variables that are not necessarily continuous (or normally distributed) and other deviations from more basic OLS regression. We will finish up with an introduction to Time Series Analysis and its underlying assumptions.

Course Goals: The main goal of this course is to help you evaluate empirical work and issues of causality as separate from simple correlation. In addition, you should be able to better choose a particular econometric model based upon the nature and characteristics of your data (for example, if you have a binary dependent variable or multiple observations per person) By the end of the course, you should be a more critical consumer of empirical work that you come across in academic journals as well as newspapers, internet, etc.. In addition you should acquire the ability explain to others problems inherent in some empirical studies.

Stata will be heavily used. Along the way, you should also become better users of STATA by expanding and deepening your skills and familiarity with the software.
**Schedule** (subject to minor changes)

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<th>DATE</th>
<th>TOPIC</th>
<th>HOMEWORK</th>
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<tr>
<td>4-Mar</td>
<td>Introduction</td>
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<td>Endogeneity</td>
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<td>Instrumental Variables</td>
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<td>Special Stata topic: cleaning data</td>
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<td>11-Mar</td>
<td>More IV/2SLS</td>
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<td>18-Mar</td>
<td>Panel Data I</td>
<td>Assignment 1 Due</td>
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<td>Special Stata topic: variable generation</td>
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<td>25-Mar</td>
<td>Panel Data II</td>
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<td>1-Apr</td>
<td>Natural Experiments</td>
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<td>Difference-in-Differences</td>
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<td>Special Stata topic: merging datasets</td>
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<td>8-Apr</td>
<td>Review</td>
<td>Assignment 2 Due</td>
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<td>Guest Speaker</td>
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<td>15-Apr</td>
<td>Mid term</td>
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<td>22-Apr</td>
<td>Limited Dependent Variables I</td>
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<td>29-Apr</td>
<td>Limited Dependent Variables II</td>
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<td>06-May</td>
<td>Intro to Time Series I</td>
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<td>13-May</td>
<td>Intro to Time Series II/Review**</td>
<td>Assignment 3 Due</td>
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<td>20-May</td>
<td>Final Exam</td>
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**BONUS TOPIC:** If there is time, we may also add Regression Discontinuity
Online Discussions
I will post a question/series of questions relevant to the course material every Monday at noon. The discussion will be open until Thursday at noon for you to comment/respond. I will check in twice a day to participate/respond/redirect. Your participation in these discussions directly impacts your grade (see below for grading procedure).

Grading
Mid-term exam: 25%
Final exam: 30%
Homeworks 1 and 2: 10% each
Homework 3: 20%
Online discussion 5%

Course Website: Copies of the course syllabus, your grades, and other relevant links and documents will be posted on the course’s ELMS/Canvas website. You can access the site via www.elms.umd.edu. You will need to use your University of Maryland “directory ID” and password.

Email: Email is the primary means of communication outside the classroom, and I will use it to inform you of important announcements. Students are responsible for updating their current email address via http://www.testudo.umd.edu/apps/saddr/ AND for paying attention to messages I send to the class via ELMS. Failure to check email, errors in forwarding email, and returned email due to “mailbox full” or “user unknown” will not excuse a student from missing announcements or deadlines. I will do my best to respond to email within 36 hours.

Contact Hours: Three credit courses at the University of Maryland require a minimum amount of contact between instructors and students. Our courses’ 12 weekly 3-hour meetings only satisfy 80% of the university’s contact requirement. The other 20% is usually satisfied by mandatory and graded online contact. Instructors have some discretion in how they structure the online component of their course. In principle, the contact hours requirement could also be satisfied by scheduling 3 additional 3-hour meetings per term, or one additional 45-minute meeting per week. The online components of our courses are a more flexible way to ensure that our program’s courses provide the same level of student-instructor contact as a traditional 15-week, face-to-face, 3-credit course at the University of Maryland.

Work Load: Mastering the material covered in this course requires a significant amount of work outside of class. Students should expect to spend more time outside
of class than in class – typically at least twice as much time. The courses in our program are 12-week courses that cover all the same material as a traditional semester-long 3-credit course. The compressed schedule makes it possible to complete our degree in just 15 months if you take 2 courses each term. But the compressed schedule also implies an accelerated pace. If we’re going to cover all the same material as a traditional semester-long 3-credit masters-level course, we need to cover the material quickly.

**Academic Integrity:** The University of Maryland has a nationally recognized Code of Academic Integrity, administered by the Student Honor Council. This Code sets standards applicable to all undergraduate and graduate students, and you are responsible for upholding these standards as you complete assignments and take exams in this course. Please make yourself aware of the consequences of cheating, fabrication, facilitation, and plagiarism. For more information see [www.studenthonorcouncil.umd.edu](http://www.studenthonorcouncil.umd.edu).

**Student Conduct:** Students are expected to treat each other with respect. Disruptive behavior of any kind will not be tolerated. Students who are unable to show civility to one another or myself will be referred to the Office of Student Conduct. You are expected to adhere to the Code of Student Conduct.

**Medical Excuses:** If you miss any class meetings for any reason, you are still responsible for all material covered during the meeting you missed. It is your responsibility – not the instructor’s – to get yourself caught up in the course.

If you need to miss an exam or other course deadline because of illness, injury, or some other emergency: Follow doctor’s orders and get documentation. Get in touch with the instructor as soon as you’re able – preferably prior to missing the exam or deadline. Communicate with the instructor to make up the course requirement as soon as possible. You are entitled to recover before you make up the course requirement, but you are not entitled to extra days to study beyond the time the doctor’s note says you’re incapacitated. If you are incapacitated for more than a week or so beyond the end of the term, your grade in the course will be an “Incomplete”. Once you make up the course requirement the instructor will change your "I" to the appropriate letter grade.

**School Closings and Delays:** Information regarding official University closing and delays can be found on the campus website and the snow phone line: (301) 405-SNOW (405-7669).

**Students with Disabilities:** The University of Maryland does not discriminate based on differences in age, race, ethnicity, sex, religion, disability, sexual orientation, class, political affiliation, and national origin. Reasonable accommodations will be made to students with documented disabilities. I will make every effort to accommodate students who are registered with the Disability Support Services (DSS) Office and who provide me with a University of Maryland DSS Accommodation form.
**Academic Progress:** The graduate school requires that students maintain a GPA of at least 3.0. Students whose cumulative GPA falls below 3.0 will be placed on academic probation by the graduate school. Students on academic probation must ask the program’s director to petition the graduate school if they want to remain in the program. The petition must include a plan for getting the student’s GPA up to at least 3.0. Students who do not live up to their plan can be forced to leave the program without having earned the degree.

**Building Access:** The door to the building at 1400 16th Street is unlocked on weekdays until 7:00 p.m. Students who arrive after 7:00 will find the door locked. The building’s security guard is stationed at a desk just inside the door until 11:00 p.m. and will let you in. You can also call the phone on the security guard’s desk by dialing (202) 328-5158. If the security guard happens to be away from his or her desk when you arrive, you can pick up the black phone to the right of the door at 1400 16th Street. You will be connected to the company that handles security for our building. If you tell them you are with the University of Maryland, they should ask you for a password. The password is “Drawbridge”. When you tell them the password, they will be able to unlock the door for you.

**Purchasing Stata:** Our program’s curriculum is designed to use Stata as the statistical software. Other leading statistical software packages include SAS and R. We have decided to focus on one package to enhance the continuity across courses in our program. A more superficial familiarity with multiple packages might be just as good as a deep understanding of a single package. But working with multiple packages would also result in less time to learn econometrics. Students in our program should purchase Stata. Stata offers different "flavors" and different lengths of license. Price varies according to these two factors. A description of the flavors is given here: [http://www.stata.com/products/which-stata-is-right-for-me/](http://www.stata.com/products/which-stata-is-right-for-me/)

Stata offers student discounts via the "Gradplan":


The least expensive appropriate option is $69 for a 6-month license for “Stata IC”. A one-year license is $98, and a perpetual license (which never expires) is $198. We do not recommend “Small Stata”. Small Stata is too limited for the course work our program. Under the Gradplan, you may install Stata on up to three different computers. You may also eventually upgrade your version of Stata and your license, at a discount, if you wish.
Online Discussion Grading

Does the comment:

1. apply what we’ve been learning to the discussion in a way that’s original and that
2. clarify ideas that have already been expressed in a way that is helpful, even if it’s
3. attempt to apply what we’ve been learning, but in a way that does not quite get it right? [3.5-4.2 points]
4. make a casual observation that someone outside the course could have made, but that does contribute at least marginally to the discussion? [3.4-3.9 points]
5. make a casual observation that someone completely unfamiliar with the principles of economics could have made, and that is very unlikely to add to anyone’s understanding of the issue at hand? [2.8-3.3 points]
6. rehash ideas that have already been well-established in a way that adds little or nothing of value to the discussion? [2.8-3.3 points]
7. miss the point of the question/discussion at hand [2.5-3.2 points]
8. introduce confusion into the discussion in a way that is actually counterproductive? [1.4-2.9 points]

Adjustments to the base grade

Is the written exposition:

1. so unclear that people cannot be sure what is being said, even after rereading the comment? [minus 0.5-1.5 points]
2. comprehensible, but marred by multiple fundamental typos and/or grammatical errors that are beneath the dignity of a professional master’s program? [minus 0.2-0.5 points]
3. clear [No adjustment. This is what’s expected]
4. so clear it’s almost poetic [plus 0.5 points]
5. Is the comment padded with unnecessary verbiage that obscures the essential point [minus 0.2-0.8]
6. Is the comment posted in the wrong thread of the overall discussion? [minus 0.2 points]
7. Has the student submitted more than 3 comments in the same week? [minus 0.5 for the 4th comment, no matter what it says; minus 0.6 for the 5th, etc.]

When a student submits 2 or 3 comments, the grade will be a weighted average of my grade for all 3 comments. The student’s best comment will receive more weight than other comments with lower grades, but comments with low grades will bring down the student’s grade to some extent.