QAMO/ECON 4651 - 001: Econometrics for BEA (3 credits)[1]

Fall 2023
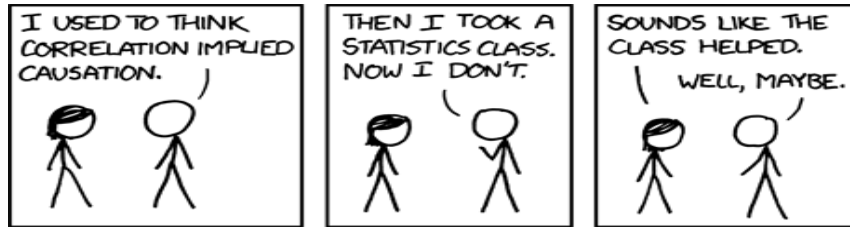
Instructor:	Pavitra Govindan
Classroom:	GC 1825
Flipped Lectures:	Tue & Thu 12:25 PM – 1:45 PM
Instructor Office Hours/Location :	Thu 10-11 AM/GC 4231
Email:	Pavitra.govindan@utah.edu

Teaching Assistants:	Maggie Reynolds (maggie.reynolds@utah.edu)
	JJ Malouf (u0586356@utah.edu)

Course Description

In this course, you will be exposed to data analysis from the lens of an economist. You will learn about statistical estimation, inference, and causal analysis methods. The emphasis of the course will be on applications, but you will be exposed to foundational econometric theory that will help you explore more advanced topics.

Teaching and Learning Methods

This course will be based on a **flipped model** i.e., you will watch lecture videos and read relevant chapters from the book ahead of each class. In these videos, you will learn econometric theory and techniques. In the class time, we will have a discussion based on those lecture videos and you will use software (Stata) to apply those techniques to data. We will have classroom

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[1] This syllabus is meant to serve as an outline and guide for our course. Please note that I may modify it with reasonable notice to you. I may also modify the Course Schedule to accommodate the needs of the class. Any changes will be announced in class and posted on Canvas under Announcements.

discussions about the content you have watched in lecture videos, solve practice problems, and do class assignments. We will discuss how econometrics can be used to analyze real life problems and how the analysis can be interpreted. Active participation in these discussions is encouraged.

Goals

At the end of this course, you will be able to:

- Understand the difference between causation and correlation in empirical data and policy debates.
- Understand and critique the empirical results in Economics journals and newspaper articles
- Conduct empirical analysis of data using Stata which includes
    - Estimating multivariate OLS regressions of different functional forms
    - Interpreting multivariate regression estimates.
    - Perform causal analysis using techniques learned in class.

Pre-requisites

Calculus II and basic statistics

Assessment

- **Home Assignments** (20%)**:** Before each class, you are *required* to read assigned readings and watch lecture videos. You will answer a weekly graded discussion in Canvas before your Tuesday class each week. You will get an **extra 5 points** on the final exam if you upload your hand-written or typed lecture notes in at least ten of the fourteen weekly modules on Canvas.

- **Class Assignments** (30%)**:** There will be a set of thirteen assignments for you to hand in. Each assignment is worth 3 points. Your performance in the top ten of these thirteen assignments will be used for your final grading. You will do bulk of these assignments in class and upload them on Canvas before your Tuesday class the next week. Some of these will require analysis using Stata. I will introduce you to the software and give you a brief reference guide to common STATA commands. These assignments can be submitted individually or in pairs.

- **Midterm Exam** (25%)**:** The midterm will be an in-class exam held during class time on **October 5th.**

- **Final exam** (25%): The final exam will be held on **Wednesday, December 13, 10:30-12:30 PM**

Computers and Software

You will require Stata to solve some of the assignments in this course. You will have access to

Stata through the University, or you can purchase a student version of the program. If you have a strong desire to use another statistical software, please contact me in advance.

Reference Book

Real econometrics by Michael A. Bailey

Optional Textbooks

You can also use the following books as reference:
Using Econometrics: A Practical Guide by A.H. Studenmund,
Introduction to Econometrics by Stock and Watson, and
Introductory Econometrics: A Modern Approach by Jefferey Wooldridge

Policies

All class assignments, canvas discussions, and midterm exam must be turned in through Canvas by the designated deadline to receive full credit, usually before class time on Tuesdays. If the deadline is missed, the late submission will have a 10% penalty for each day you submit late with a lowest possible grade of 50%. That is, if you submit the first day after the deadline, your maximum score possible is 90%. If you submit the second day, after the deadline, your maximum score possible is 80%. And this trend continues, till your maximum score possible is 50% after which your penalty does not increase.

You should inform me in advance to request special consideration in the case of some extenuating circumstance that prevents you from taking an exam or submitting an assignment at the scheduled time. If the extenuating circumstances pertain to medical reasons, I require you to submit a doctor's note to get an extension on an assignment or exam. Final exam will not be given at multiple dates to accommodate travel plans. Consistent attendance is strongly recommended but attendance is not taken.

Grading Scale

I reserve the right to curve class grades. Grades will fall into the following categories.

Grade	Score (s)
A	$94 \leq s$
A-	$90 \leq s < 94$
B+	$87 \leq s < 90$
B	$83 \leq s < 87$
B-	$80 \leq s < 83$
C+	$77 \leq s < 80$
C	$73 \leq s < 77$
C-	$70 \leq s < 73$
D+	$65 \leq s < 70$
D	$60 \leq s < 65$
D-	$50 \leq s < 60$
E	$s < 50$

Tentative Schedule

Week	Tue	Thu	Chapter(s), topic	Note
1	8/22	8/24	Course overview, Statistics refresher (appendices A-I)	
2	8/29	8/31	Econometric Model, Causality Ch 1	A1, 8/31[a]
3	9/5	9/7	Labor Day, Regressions, Ch 3.1, 5.1, 5.4	A2, 9/7
4	9/12	9/14	Stata Intro Ch 2, The classical model (3.3,3.6,	A3, 9/12
5	9/19	9/21	Stata (classical model), Sampling distributions (3.2-3.5)	A4, 9/19
6	9/26	9/28	Hypothesis Testing (Part 1), Ch 4.1, 4.2	A5, 9/26
7	10/3	10/5	Midterm review, Midterm Exam	A6, 10/3 Midterm, 10/5
8	10/10	10/12	--	Fall Break
9	10/17	10/19	Hypothesis Testing (Part 2), Ch 4.3-4.6, 7.4	No class on 10/19
10	10/24	10/26	OVB and Irrelevant Variables, Ch 5.1-5.3, 5.5	A7, 10/24
11	10/31	11/2	Functional forms, Ch 7.1-7.2	A8, 10/31
12	11/7	11/9	Multicollinearity (5.4), Serial Correlation	A9, 11/7
13	11/14	11/16	Heteroscedasticity (3.6), dummy dependent var Ch 12	A10, 11/14
14	11/21	11/23	dummy dependent var Ch 12, Thanksgiving break	A11, 11/21
15	11/28	11/30	Experiments Ch 10	A12, 11/28
16	12/5	12/7	Final Exam Week	A13, 12/5

a All assignments are due at the beginning of class on the due date on Canvas.

University Policies

1. *The Americans with Disabilities Act*. The University of Utah seeks to provide equal access to its programs, services, and activities for people with disabilities. If you will need accommodations in this class, reasonable prior notice needs to be given to the Center for Disability Services, 162 Olpin Union Building, (801) 581-5020. CDS will work with you and the instructor to make arrangements for accommodations. All written information in this course can be made available in
an alternative format with prior notification to the Center for Disability Services.

2. *University Safety Statement.* The University of Utah values the safety of all campus community members. To report suspicious activity or to request a courtesy escort, call campus police at 801-585-COPS (801-585-2677). You will receive important emergency alerts and safety messages regarding campus safety via text message. For more information regarding safety and to view available training resources, including helpful videos, visit safeu.utah.edu.

3. *Addressing Sexual Misconduct*. Title IX makes it clear that violence and harassment based on sex and gender (which Includes sexual orientation and gender identity/expression) is a civil rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, color, religion, age, status as a person with a disability, veteran's status or genetic information. If you or someone you know has been harassed or assaulted, you are encouraged to report it to the Title IX Coordinator in the Office of Equal Opportunity and Affirmative Action, 135 Park Building, 801-581-8365, or the Office of the Dean of Students, 270 Union Building, 801-581-7066. For support and confidential consultation, contact the Center for Student Wellness, 426 SSB, 801-581-7776. To report to the police, contact the Department of Public Safety, 801-585-2677(COPS).

4. *Wellness statement.* Personal concerns such as stress, anxiety, relationship difficulties, depression, cross-cultural differences, etc., can interfere with a student's ability to succeed and thrive at the University of Utah. For helpful resources contact the Center for Student Wellness at www.wellness.utah.edu or 801-581-7776.

5. *Student Names & Personal Pronouns statement.* Class rosters are provided to the instructor with the student's legal name as well as "Preferred first name" (if previously entered by you in the Student Profile section of your CIS account, which managed can be managed at any time). While CIS refers to this as merely a preference, I will honor you by referring to you with the name and pronoun that feels best for you in class or on assignments. Please advise me of any name or pronoun changes so I can help create a learning environment in which you, your name, and your pronoun are respected. If you need any assistance or support, please reach out to the LGBT Resource Center. https://lgbt.utah.edu/campus/faculty_resources.php