Econ 103: Introduction

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UCLA

Summer Quarter, 2021

Why Econometrics?

Up till now, we have analyzed economic behavior by looking at economic theory.

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  Theory: The benefit of joining the gym is higher than the cost.

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- Question: Does it matter if we let people opt in or opt out?
  Theory: Will not affect people's choices
  Data: Opt out typically leads to higher uptake.

Why Econometrics?

- Economic Theory and modeling can teach us how to formally think through problems.
- Econometrics can help us fit parameters of our models or let us know if our models are correct.

Why Econometrics?

Consider the simple supply and demand pricing model from Econ 1:

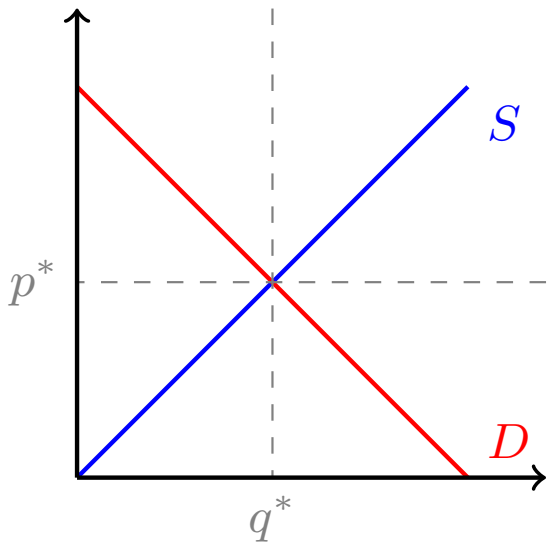

Figure 1: Equilibrium price and quantity

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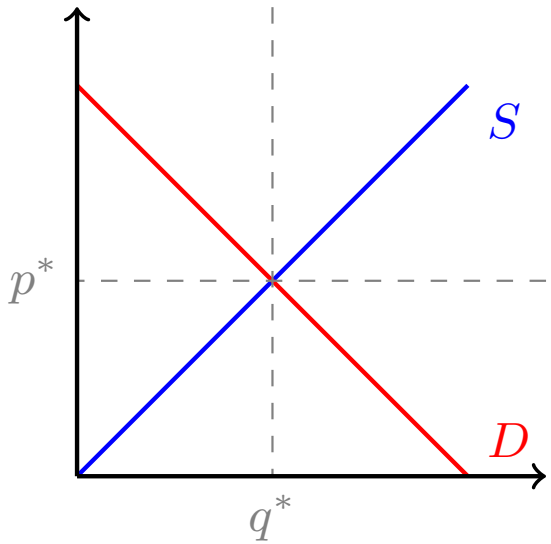

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  - Downward sloping demand and upward sloping supply

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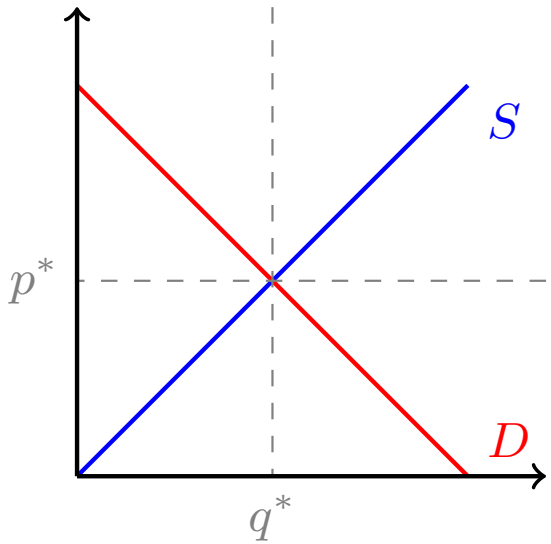

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  - Theory can't tell us more about the curves exact shapes

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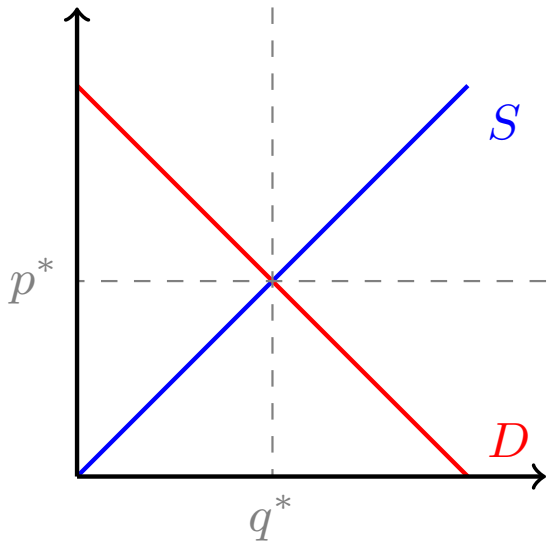

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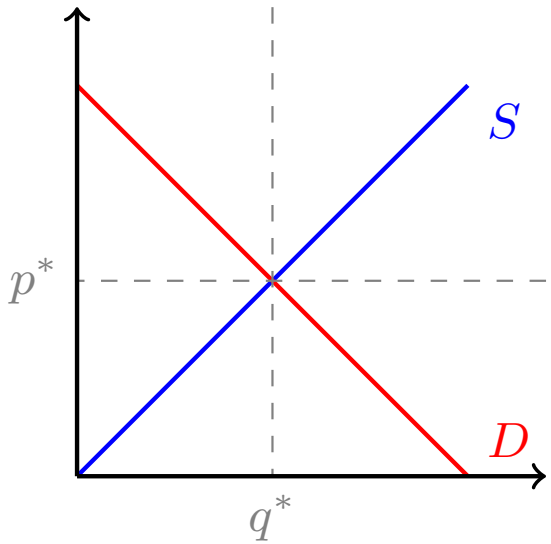

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  - Can reject theory if demand slopes upward

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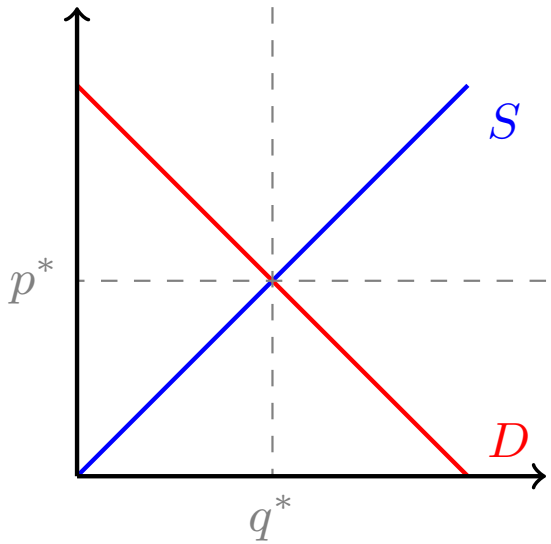

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  - Theory can inform estimation technique

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  - A demand curve is a causal relationship: what is the quantity demanded if the firm exogenously sets the price at certain level?
  - May be interested in the effect of a certain policy: what would happen if we raised the minimum wage?

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  - Politically impractical (and potentially unethical!) to randomly implement a policy or assign people to treatment

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  - If we want to predict US GDP, only have about 150 years of economic data to use

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What will this course cover?

This course will mainly focus on linear regression, a simple but powerful statistical model.

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In this course we will learn how to implement linear regression as well as how to correctly interpret the results from our regressions.

What will this course cover?

Let's look at some potentially problematic conclusions to draw from data.

RESEARCH ARTICLE

Consumption of energy drinks is associated with depression, anxiety, and stress in young adult males: Evidence from a longitudinal cohort study

Simrat Kaur, Hayley Christian, Matthew N. Cooper, Jacinta Francis, Karina Allen, Gina Trapp

First published: 26 August 2020 | https://doi.org/10.1002/da.23090

Read the full text > PDF TOOLS SHARE

- At first read, easy to interpret paper as saying that consuming energy drinks leads to anxiety, depression, and stress
  - But what types of people drink energy drinks?
  - Are these people representative of the entire population?
  - Can we definitively say that these people are stressed *because* of the energy drinks?

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Received: 16 July 2020 | Accepted: 18 December 2020

DOI: 10.1111/jasp.12737

ORIGINAL ARTICLE

Journal of Applied Social Psychology WILEY

The Greta Thunberg Effect: Familiarity with Greta Thunberg predicts intentions to engage in climate activism in the United States

Anandita Sabherwal[1] | Matthew T. Ballew[2] | Sander van der Linden[1] | Abel Gustafson[3] | Matthew H. Goldberg[4] | Edward W. Maibach[5] | John E. Kotcher[5] | Janet K. Swim[6] | Seth A. Rosenthal[4] | Anthony Leiserowitz[4]

- Paper found that people that attended a Greta Thunberg rally were more likely to engage in other forms of climate activism.
  - Is this causal?
  - Perhaps! But people who are attending a Greta Thunberg rally may already be more likely to engage in other forms of climate activism.

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Just have to be careful not predictive and causal analysis and precise about what exactly we can say from our statistical models.

In this course we will not only focus on the mechanics of linear regression but also how to correctly interpret our results and use them to make careful inferences about the world.

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- Week 6: Beyond Linear Regression. Causal inference; differences in differences; potential outcomes framework, non-linear models.

Course Details

Pre-requisites

- Econ 11 (Micro Theory) and Econ 41 (Statistics for Economists) or departmental approved equivalents
- Mainly will rely on material from Econ 41

Co-requisite

- Must also enroll in Econ 103L (lab section)
- Will mainly focus on coding in R, holding extra OH, and potentially covering 103 material if we fall behind

Course Detials

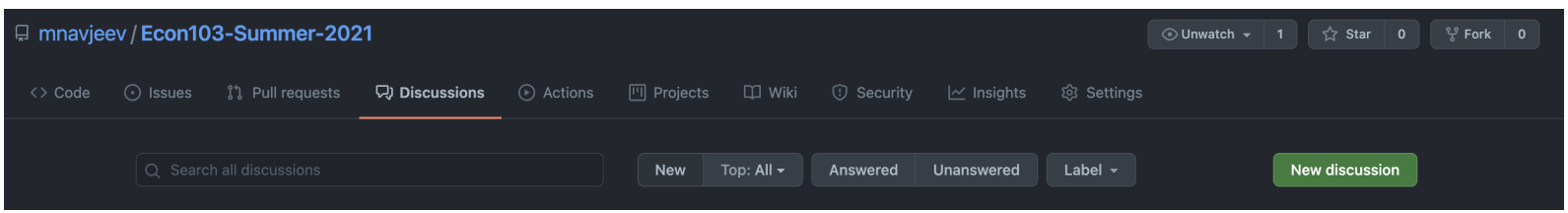
Remote Teaching

- Lecture Logistics.
  - Lectures and Lab Lectures will be held live at the alloted PST Time
    - This allows for more interaction between me and you as well as among yourselves
  - Lectures will also be recorded and posted online to the CCLE page.
- Office Hours.
  - My office hours will be held Tuesdays at 11am-12pm and again at 9pm-10pm PST
  - TA will post their own office hours
  - Happy to stay after lecture and answer questions as well

Course Details

Contact Information

- For questions outside of office hours, can reach out to me at mnavjeevan@g.ucla.edu
- Can also open up a discussion on the GitHub
  - This way everyone can see your question and you may be able to get help from other students
  - https://github.com/mnavjeev/Econ103-Summer-2021



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Grading

- Problem Sets (60% of final grade)
  - Half credit for completion, other half for correctness
  - Mix of theory and R coding
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  - Problem Sets will be assigned at the beginning of weeks 2, 4,and 6 and will be due at the ends of weeks 3, 5, and 6.

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- Final Project (20% of final grade)
  - Data exercise, will be given a data set and ask them to come up with an appropriate statistical model
  - (Tentatively) will be allowed to work in groups

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