ECON 191: Introduction

Berkeley Economics Faculty

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ECO 191 Overview

- Goal of the course: **<u>you</u>** will write an independent research paper
- What does instructor team do?
  - Set a series of goals (assignments) that will culminate in the final paper
  - Monitor progress and provide feedback
  - Lectures on research methods (GSI-led tutorials)
  - Faculty speakers provide state of the art research lectures
- Your job:
  - Find a research question
  - Devise a plan to answer it
    - Collect data and develop the method
  - Write, write, write
  - Turn it in by December 8th , 2025!
    - MANY assignments along the way!

The Econ 191 Team

- Research Mentors: 2 GSIs + 3 Readers
  - Will mentor you, in office hours and by giving feedback on assignments
  - Will grade your assignments
- Readers
  - Research mentors
- Graduate Student Instructors (GSIs):
  - Research mentors
  - Additionally, will conduct instruction in tutorials, on econometric methods
- Many economics professors from UC Berkeley
  - Will give the faculty talks
- Myself (next slide)
  - Faculty course coordinator

About Me

- Economics department professor with research focuses:
    - -- Health Economics
    - -- Industrial Organization
    - -- Behavioral Economics

- My other courses: health economics (157) and PhD-level industrial organization (220C). Have also supervised about 30 senior theses and 50 PhD theses.

- At UC Berkeley since 2010. Before:
    - BA at Princeton University (2000-2004)
    - MA + PhD at Northwestern University (2004-2010)

About Me

- Have used many of the methods you will learn about in research articles over the years:

  -- Regression analysis of many forms

  -- Difference-in-differences

  -- Structural econometrics

  -- Machine learning

  -- Conceptual models

  -- Instrumental variables

- I may discuss my own research in more depth in a faculty lecture later in the semester

Schedule

	Faculty/GSI	Topic	Topic	Faculty/GSI	Assignment
8/28			Class Intro	Ben Handel	
9/2 9/4	Sebastian Puerta	Intro to Stata	Economics/data resources on campus	Jim Church	
9/9 9/11	Emmanual Saez	Public Economics	Intro to regression methods	Sarah Frick	
9/16 9/18	Ted Miguel	Development Economics	Reading and Reviewing the Literature	Sarah Frick	1: Brainstorming research questions
9/23 9/25	Shachar Kariv	Economic Theory	RCT and IV	Sarah Frick	
9/30 10/2	Emi Nakamura	Macro Economics	IV and RD	Sarah Frick	2: Proposal v1
10/7 10/9	Sebastian Puerta	Diff-in-Diff I (Intro)	Diff-in-Diff II (Event Studies)	Sebastian Puerta	
10/14 10/16	Sebastian Puerta	Diff-in-Diff II (Synthetic control groups, p-score matching)	Panel Data + Fixed Effects	Sarah Frick	
10/21 10/23	Sebastian Puerta	How to work with data	Labor Economics	Enrico Moretti	3: Proposal v2
10/28 10/30	Matt Backus	IO	How to write an Econ Paper + Latex	Sarah Frick	

11/4 11/6	Cecile Gaubert	Trade Economics	Data Visualization	Sebastian Puerta	
11/11 11/13	*One-on-one meeting slots with Research Mentors*				4: Overview of data / initial results
11/18 11/20	Gautam Rao	Behavioral Economics	Job Market Presentation (To be Confirmed)	Guest Graduate Student	
11/25 11/27	No class	Thanksgiving	No class	Thanksgiving	
12/9					5: Final paper due

Faculty lectures should provide range of cutting edge research examples

Tutorials will help you develop methods and framework for your own research paper

Your job: come to class, keep up with assignments schedule, which all push towards one main goal

Our jobs: help support you in learning methods, finding data, writing paper

Syllabus

As usual, the syllabus has a lot of important and useful details for the course. Please review the syllabus very carefully ASAP and reach out with any questions.

Let's go over the syllabus a little bit now to give you a little bit more of a sense of the assignments, class policies, etc.

Research Example # 1

What is the impact of how much consumers have to pay for health care on the amount of health care they use?

Study leverages forced shift of employees from free health care to high deductible health care

WHAT DOES A DEDUCTIBLE DO? THE IMPACT OF COST-SHARING ON HEALTH CARE PRICES, QUANTITIES, AND SPENDING DYNAMICS*

ZAREK C. BROT-GOLDBERG
AMITABH CHANDRA
BENJAMIN R. HANDEL
JONATHAN T. KOLSTAD

Measuring consumer responsiveness to medical care prices is a central issue in health economics and a key ingredient in the optimal design and regulation of health insurance markets. We leverage a natural experiment at a large self-insured firm that required all of its employees to switch from an insurance plan that provided free health care to a nonlinear, high-deductible plan. The switch caused a spending reduction between 11.8% and 13.8% of total firm-wide health spending. We decompose this spending reduction into the components of (i) consumer price shopping, (ii) quantity reductions, and (iii) quantity substitutions and find that spending reductions are entirely due to outright reductions in quantity. We find no evidence of consumers learning to price shop after two years in high-deductible coverage. Consumers reduce quantities across the spectrum of health care services, including potentially valuable care (e.g., preventive services) and potentially wasteful care (e.g., imaging services). To better understand these changes, we study how consumers respond to the complex structure of the high-deductible contract. Consumers respond heavily to spot prices at the time of care, reducing their spending by 42% when under the deductible, conditional on their true expected end-of-year price and their prior year end-of-year marginal price. There is no evidence of learning to respond to the true shadow price in the second year post-switch. *JEL Codes*: D81, G22, I13.
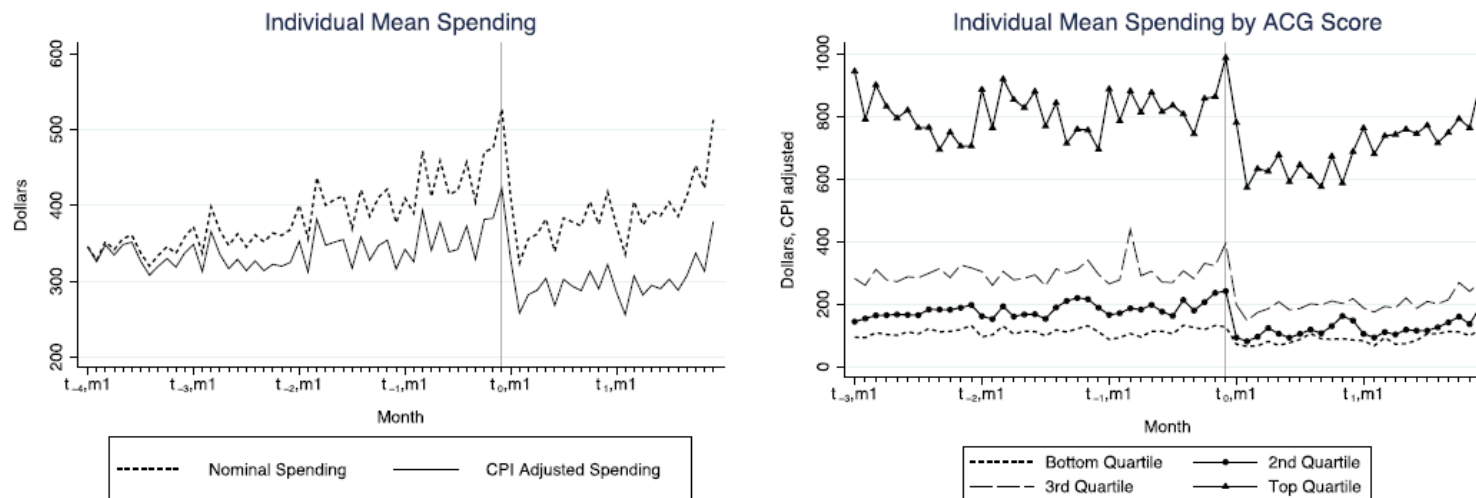
Research Example # 1

FIGURE I

Incremental Spending Time Series

The left panel plots mean monthly spending by individuals in our primary sample over the six years in our data, both adjusted and unadjusted for age and price trends. The right panel plots adjusted spending for individuals in a given month, by ACG predictive health index quartile (the index is calculated at the beginning of each calendar year).
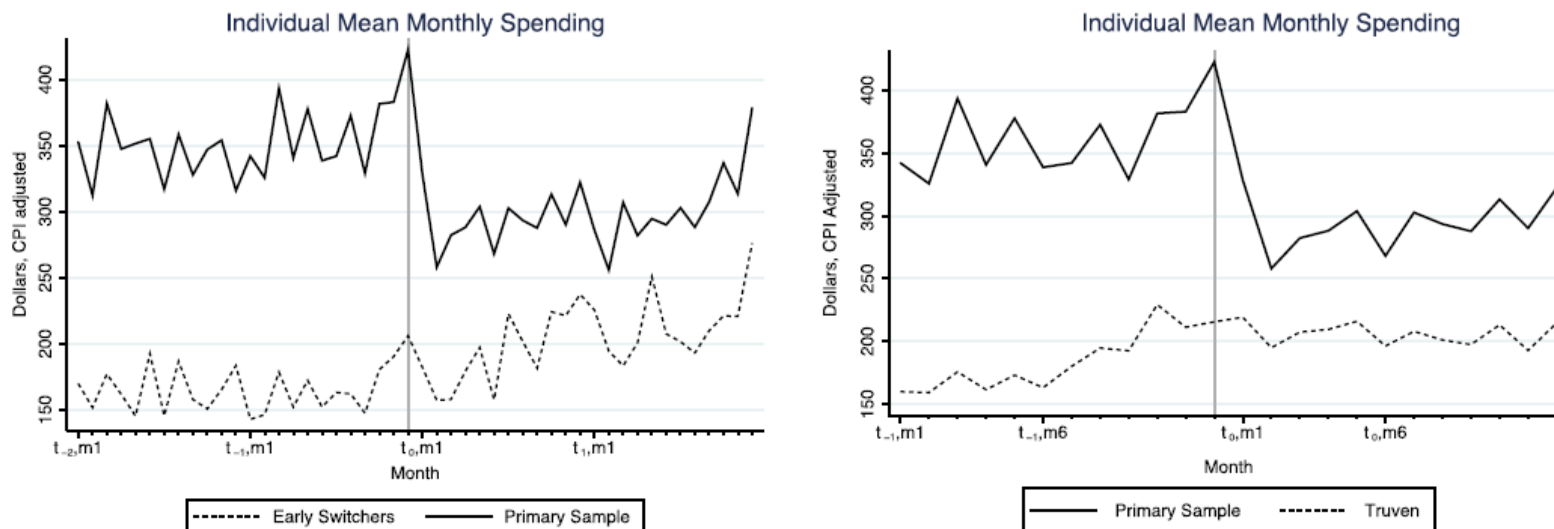
Research Example # 1

FIGURE II

Difference-in-Differences Time Series Analysis: Early Switchers and Truven Control Group

The left panel presents unweighted spending over time for early switchers to the HDHP alongside our primary sample. The right panel presents spending for our primary sample alongside spending for the weighted control group formed from Truven MarketScan data.

Research Example # 2

The Effect of State Taxes on the Geographical Location of Top Earners: Evidence from Star Scientists[†]

By Enrico Moretti and Daniel J. Wilson*

We quantify how sensitive is migration by star scientists to changes in personal and business tax differentials across states. We uncover large, stable, and precisely estimated effects of personal and corporate taxes on star scientists' migration patterns. The long-run elasticity of mobility relative to taxes is 1.8 for personal income taxes, 1.9 for state corporate income tax, and −1.7 for the investment tax credit. While there are many other factors that drive when innovative individuals and innovative companies decide to locate, there are enough firms and workers on the margin that state taxes matter. (JEL H24, H25, H71, H73, J44, J61, R32)

Research Example # 3

Empirical research in macroeconomics using new state-level price indices to estimate how the Phillps curve has changed over time

Estimate low relationship between employment and inflation, with important implications for macroeconomic policy

THE SLOPE OF THE PHILLIPS CURVE: EVIDENCE FROM U.S. STATES[*]

Jonathon Hazell
Juan Herreño
Emi Nakamura
Jón Steinsson

We estimate the slope of the Phillips curve in the cross section of U.S. states using newly constructed state-level price indices for nontradeable goods back to 1978. Our estimates indicate that the slope of the Phillips curve is small and was small even during the early 1980s. We estimate only a modest decline in the slope of the Phillips curve since the 1980s. We use a multiregion model to infer the slope of the aggregate Phillips curve from our regional estimates. Applying our estimates to recent unemployment dynamics yields essentially no missing disinflation or missing reinflation over the past few business cycles. Our results imply that the sharp drop in core inflation in the early 1980s was mostly due to shifting expectations about long-run monetary policy as opposed to a steep Phillips curve, and the greater stability of inflation between 1990 and 2020 is mostly due to long-run inflation expectations becoming more firmly anchored. *JEL Codes:* E30.

How to Find Your Own Topic

- Inspiration from economics courses you have taken

- Read existing economics academic research!

- Many good economics research journals. Mentors can help direct you if you have specific topic interests. *Journal of Economic Perspectives* is a good place to start.

- Read the news (Economist, WSJ, NYT, NPR……)

- Policy debates and everyday observations

How to Find Your Own Topic

About the Journal of Economic Perspectives

ISSN 0895-3309 (Print) | ISSN 1944-7965 (Online)

The *Journal of Economic Perspectives (JEP)* attempts to fill a gap between the general interest press and most other academic economics journals.

The journal aims to publish articles that will serve several goals: to synthesize and integrate lessons learned from active lines of economic research; to provide economic analysis of public policy issues; to encourage cross-fertilization of ideas among the fields of thinking; to offer readers an accessible source for state-of-the-art economic thinking; to suggest directions for future research; to provide insights and readings for classroom use; and to address issues relating to the economics profession. Articles appearing in the journal are normally solicited by the editors and associate editors. Proposals for topics and authors should be directed to the journal office.
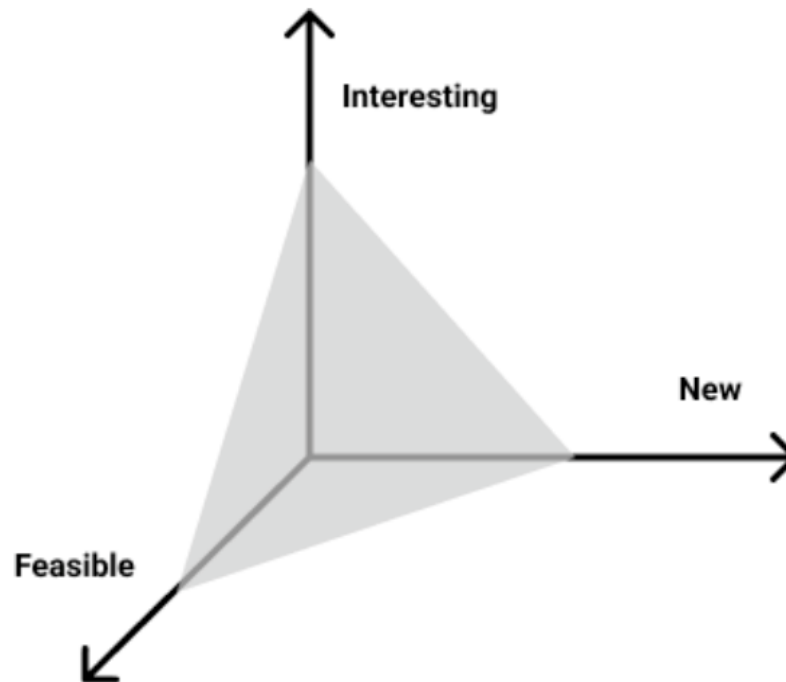
All issues of the *Journal of Economic Perspectives* **(1987 - present) are now publicly accessible online at no charge, compliments of the American Economic Association.**

Your Own Topic

- Once you have topic area in mind, finding established data and honing topic accordingly a good place to start

  -- Discussion with econ librarian next week

  -- Other academic research (mentors, classmates, google)

- Course assignments will help outline the steps to make this happen productively

- Essentially all topics will be <u>empirical</u> but can / should combine economic models with project as needed

1 A good project: the impossible triad

A project is *good* if it is (1) interesting, (2) new, and (3) feasible, as in the Figure below.

The problem, of course, is that most research ideas check at most two out three boxes. If an idea is interesting and new, then probably nobody wrote about it because it is unfeasible. If an idea is interesting and feasible, then probably somebody already took it. If an idea is new and feasible, then it probably is just not that interesting.

The Challenge

- Most value added comes from answering a research question that is open.
  - MOST questions in economics are open, and old!

- However, *open* research questions are usually difficult to answer

- Example: when it comes to causal mechanisms, there are often "confounders"
  - Correlation: whenever X is high, Y is high
  - Does this imply that X causes Y? Or Y causes X? Or a third factor, Z?
  - Correlation does not imply causation!

- Solutions:
  - Non-causal research: look for new data sets to do descriptive research
  - Causal research:
    - Modern applied research often aims to approximate laboratory approach in the natural sciences: a randomized control trail with a treatment group and a control group
    - Look for interesting or unusual events or policies or factors that permit you to learn something about the causal effect of X on Y

Realistic Expectations!

4 No result is as bad or as good as it looks initially.

So practice emotional regulation.   Ricardo Dahis "Advice for Academic Research"

- No paper is perfect!

- Typically, your data and method will have limitations

- Research questions are best judged *a priori* (=before taking the final look at the data and conducting the final empirical analysis)

- Statistical precision may be low
  - Cannot rule out that a difference between a treatment and a control group is "noise" (random)

Realistic Expectations!

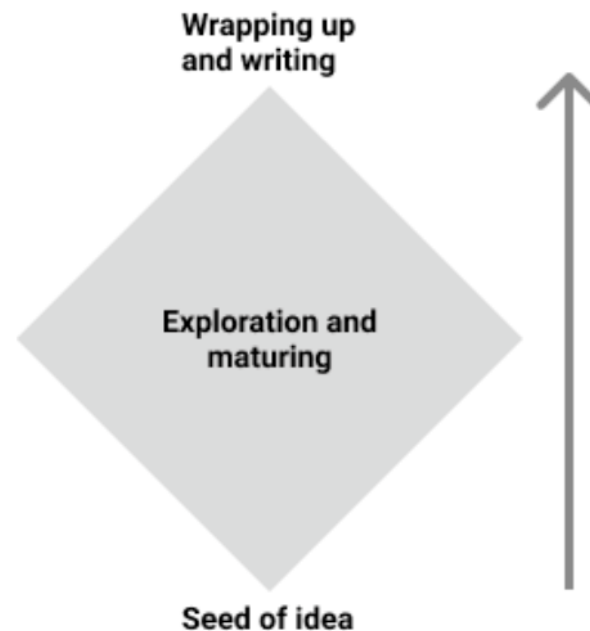**4** **No result is as bad or as good as it looks initially.**

So practice emotional regulation.

Ricardo Dahis "Advice for Academic Research"

- Econ 191 – and economics as a research field – rewards **transparency**:

  - Explain your research questions, your data, how it differs from the ideal data set, and then describe what you end up learning from that research design

  - Also describe the limitations and weaknesses of your paper, and in the conclusion describe open questions for future research

  - Science progresses with "null results" too

  - Do not try to hide flaws in the data or "spruce up" results by dropping influential observations, p-hacking (looking for specifications that give significance), data mining…

3 A project's scope evolves like a diamond.

Research projects develop in roughly three stages. First, it starts with an idea seed. That is often an intuition, a puzzle, or maybe already a clear question. Second, its scope is enlarged as one explores various theories, data sets, and empirical specifications. Finally, the findings are summarized and trimmed down for writing, presenting, and publishing.

Ricardo Dahis "Advice for Academic Research"

Assignment Schedule: Plan Now!

Grading. The following table shows the points awarded for each assignment. The total number of points available is 110 (including 10 "bonus points" for attendance).

Assignment	Points	Due
Research brainstorming	10	September 19
Research proposal v1	15	October 3
Research proposal v2	15	October 24
Draft of results	15	November 14
Final paper / Honors Thesis	45	December 9
Attendance	10 "bonus points"	

- Please let us know if you have any questions about the course set up

- Assignments to research mentors will occur soon

- Tutorials / faculty research lectures / office hours start next week

- Shortly, examples of good prior research papers will be posted on Bcourses

- Enjoy the semester!