

ECONOMETRICS

01/24/2021

LESSON PLAN:

- SELF-INTRODUCTION
- COURSE INFO + SYLLABUS + EXPECTATIONS
- COURSE LOGISTICS:

→ GITUB NAVIGATION
OFFICE HOURS
TEXT BOOK
R & R-STUDIO
→ STACKOVERFLOW

R & R-STUDIO
STACK OVERFLOW

GITUB

PROGRAMMING

GRADING

- WHAT IS ECONOMETRICS?

MAJOR CHANGE IN WORK DUE TO TECH

WE CAN

PROGRESS

BIG CHANGES:

STORE BIG DATA

- DATA STORAGE TECH: CLOUDS, SERVERS, ETC.
- WE GENERATE MORE DATA: SMART DEVICES
- WE BETTER MANAGE DATA: SQL, GRAPH DATA BASES
- BETTER ANALYSE DATA: MACHINE LEARNING
AI
STATISTICAL LEARNING

SPREAD
SHEETS



MORE COMPLEX

DATA SYSTEMS

PYTHON, R, ETC.

THIS COURSE: A FIRST STEP TO ANALYSE DATA.
→ THEORY

ECONOMETRICS: ECONOMICS +
SOME FAMILIAR METRICS
WITH THE CONCEPTS TESTING
AND BASIC TOOLS IN ECONOMETRICS.

WHAT CAN WE LEARN FROM THE DATA?

DO DATA CONFIRM THE THEORY?

DATA SCIENCE → PREDICTION
IS NOTHING BAD MACHINE LEARNING
ABOUT THIS
ECONOMETRICIAN → MEASURING AN EFFECT
VALIDATION OF THEORY

CAUSALITY IS THE DISTINGUISHING THE
TWO:

GOLD STANDARD APPROACH TO TEST THEORY:

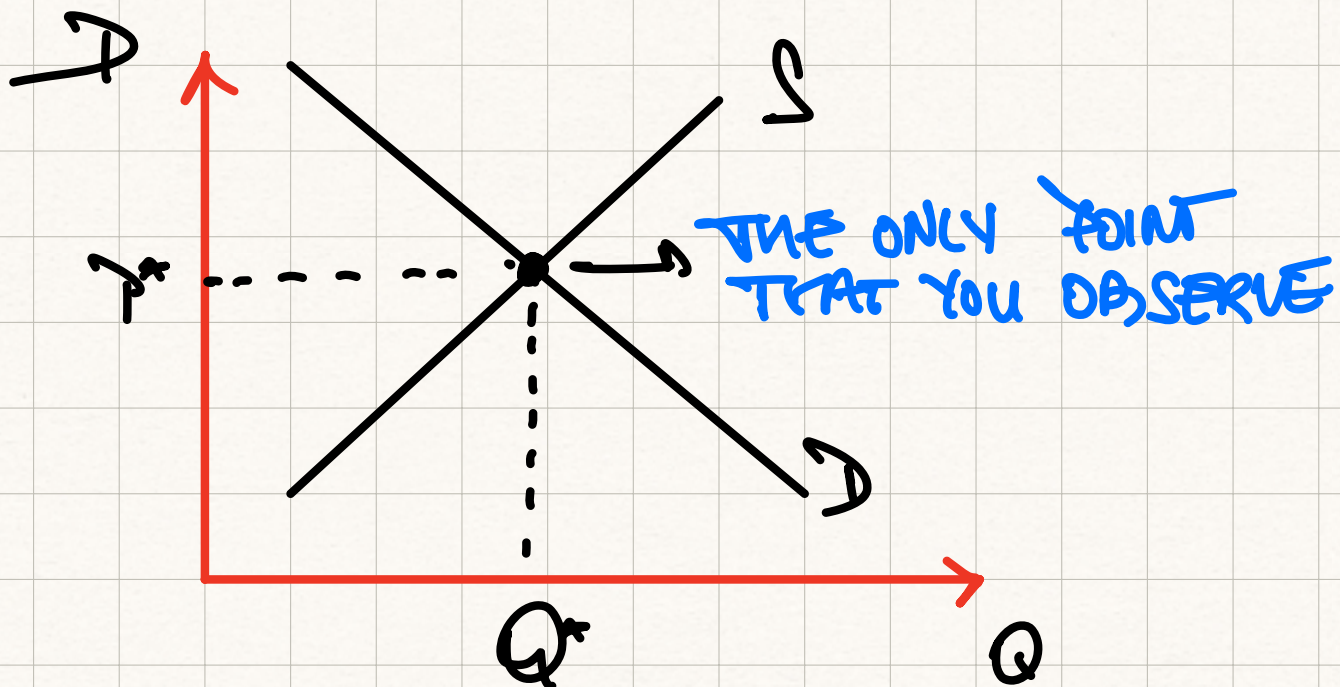
DOUBLE-BLIND ← RANDOMIZED CONTROLLED
EXPERIMENTS
A/B TESTS

BUT IN LOTS OF SETTINGS : EXPERIMENTS
ARE IMPOSSIBLE : TOO COSTLY, NOT POSSIBLE,
NOT ETHICAL

INTEREST RATE \rightarrow INFLATION

SMOKING \rightarrow CHILD HEALTH
DURING PREGNANCY

ECONOMETRICS TRIES TO UNDERSTAND
THE RELATIONSHIPS THAT COULD OR
COULD NOT BE TESTED USING PLOTS.



D & S ARE NOT FULLY OBSERVED
(THEORETICAL)

Goal is to INFER THE D&S CURVES
WITHOUT OBSERVING THE FULL D&S
SCHEDULE.

TOOLS:

1. STATISTICAL TOOLS
 - WORK HORSE :
ORDINARY LEAST
SQUARES
2. THEORY / HYPOTHESIS TO TEST
3. CAUSAL RESEARCH DESIGN
 - RANDOMIZED EXPERIMENTS
↳ UNDERSTANDING THE CAUSALITY