

# Course Introduction: Empirical IO

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Grad IO

# Course Requirements

This course will consist of:

- ▶ Weekly readings/Participation
- ▶ 4-5 Problem Sets (15% each)
- ▶ A research proposal (20%).

Most students are in the 2nd year of their PhD. For the course to make sense I assume you are familiar with:

- ▶ Maximum Likelihood and GMM estimation
- ▶ First-year micro consumer theory (taking first-order conditions, deriving comparative statics)
- ▶ Some basic game theory (what is Nash Eq? What is subgame perfection?)
- ▶ Undergraduate IO at the level of [Cabral's book]
- ▶ Some familiarity with Tirole-style IO modeling [Tirole's book]

You are not required to go out and buy textbooks (We don't specifically follow any one). But here are some books most IO economists own and find useful:

- ▶ Train (2009): Discrete Choice Methods with Simulation  
<https://eml.berkeley.edu/books/choice2.html>
- ▶ “Discrete Choice Theory of Product Differentiation” by Anderson, De Palma, Thisse (now out of print)
- ▶ Vives (2001): Oligopoly Pricing: Old Ideas and New Tools [Vives]
- ▶ Deaton and Muellbauer (1980): Economics and Consumer Behavior [Deaton Muellbauer]

# Questions

- ▶ Can you audit the course? Yes, but I would prefer you take the course for credit.
- ▶ Should I take this course in my first year? No, I teach this course every year.
- ▶ If I want to do IO as my primary field, what else do I need to do?
  - ▶ Take Prof Jovanovic's IO Theory course
  - ▶ Take Prof Waldinger's Empirical IO Course in the Spring
  - ▶ Attend the Friday IO Seminar at 11am
  - ▶ Attend the Friday Stern Workshop at 4pm
  - ▶ Eventually find three people to serve on your committee

This is now one of the largest IO groups in the world

- ▶ Luis Cabral (Stern): Applied IO Theory, Innovation, Platforms, Signalling, Reputation, Creative Industries
- ▶ Michael Dickstein (Stern): IO of Healthcare Markets (Hospitals, Physicians, Insurers, Pharma) and IO/International Trade
- ▶ Paul Scott (Stern): IO of Agriculture and Land Use, IO and Environmental Economics, Telecom, Production and Markups
- ▶ Giulia Brancaccio (Stern): IO of Transportation Markets, IO and International Trade, Markets with Search and Matching Frictions, IO/Finance
- ▶ Daniel Waldinger (FAS): Empirical Market Design, IO and Urban Economics (Rent Control, Public Housing, etc.)
- ▶ Audrey Tiew (FAS): Antitrust, Dynamic Games, Semiconductors, Environmental IO
- ▶ Thi Mai Anh Nguyen (FAS): Search and Matching (Trucking), IO and Transportation
- ▶ Anna Vitali (FAS): Development/IO (Entry, Firm Location, Consumer Search)

# IO as a set of Tools

- ▶ Tools for estimating demand in multi-product settings
- ▶ Tools for analyzing strategic interactions (prices, quantities, investment, quality) among firms
- ▶ How do changes (subsidies, taxes, tariffs, entry barriers) change market outcomes
- ▶ Modeling search and matching frictions
- ▶ Modeling contractual incentives (moral hazard, adverse selection, vertical contracts)

# IO as a set of Tools

Lots of recent students have done “IO-Plus”

- ▶ Angela Crema (Rochester): Race-preferences and School Quality after School Choice
- ▶ Pierre Bodere (Yale SOM): Entry and Quality Competition in Pre-Schools
- ▶ Jonathan Elliott (Johns Hopkins): Electricity Generation and Green Subsidy Design in Western Australia
- ▶ German Guittierez (Washington Foster): Platform Design and Competition on Amazon
- ▶ Yinan Wang (Amazon): Algorithmic Pricing on Airbnb
- ▶ Chitra Marti (Cornerstone): Economics of Cybersecurity
- ▶ Chiara Gardenghi: Bundled Discounts in Physician Administered Drugs
- ▶ Nano Ochoa: Housing Subsidy Design in Chile
- ▶ Helena Pedrotti: Social Housing Construction in France



# IO as a set of questions

- ▶ What is market power and where does it come from?
- ▶ Who competes with whom?
- ▶ What features of markets tell us about competition, innovation, product quality, etc?
- ▶ How can we tell if firms are competing (or colluding) from data?
- ▶ How can we design mechanisms using data (auctions, kidneys, etc.)
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