Behavioral and Experimental Economics Introduction

Professor Jonathan M.V. Davis

Outline

1. Who am I?
2. Course Policies and Materials
3. Assignments and Grading
4. What is this course about?
   a. Economics
   b. Experiments
   c. Behavior
5. Who cares?
6. Where do we go from here?

Who am I?

Assistant Professor in Department of Economics

PhD from University of Chicago

Research topics in the analysis and design of experiments, inequality, and social policy

Who am I?

E-mail: jdavis5@uoregon.edu

Office: 516 PLC

Office Hours: Mondays 3:30-4:30pm

E-mail me if you want to meet at a different time or have a question I can answer over e-mail!

Course Policies

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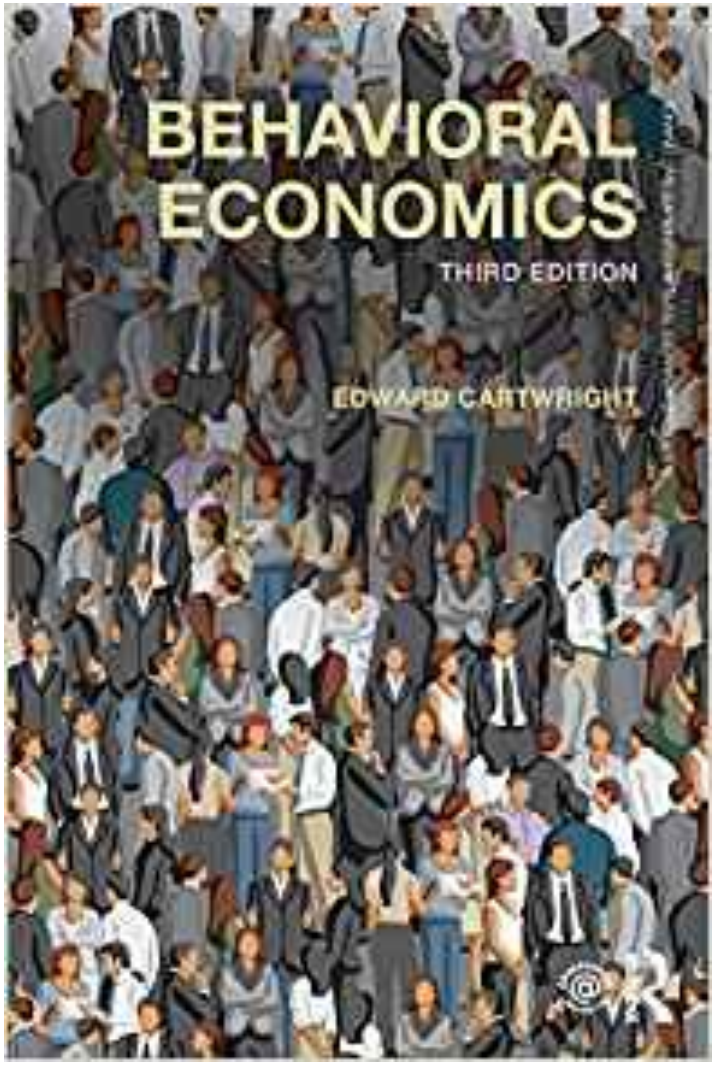
3. Be kind to each other.
4. Don’t cheat.

Required Materials

Required Materials

I will post lecture slides and relevant papers on Canvas.

Not Required Textbook



Other Not Required References

- *Thinking, Fast and Slow* by Daniel Kahneman
- *Misbehaving* by Richard Thaler
- *The Winner's Curse: Paradoxes and Anomalies of Economic Life* by Richard Thaler
- *The Undoing Project* by Michael Lewis
- *Nudge* by Richard Thaler and Cass Sunstein
- *The Why Axis* by Uri Gneezy and John List
- *Never Split the Difference* by Chris Voss (mainly Chapter 6)

Homework Assignments

4 homework assignments

Due Dates

- Wednesday, April 13th (Week 3)
- Wednesday, April 27thth (Week 5)
- Wednesday, May 11th (Week 7)
- Wednesday, May 25th (Week 9)

ENCOURAGED TO WORK IN A GROUP!

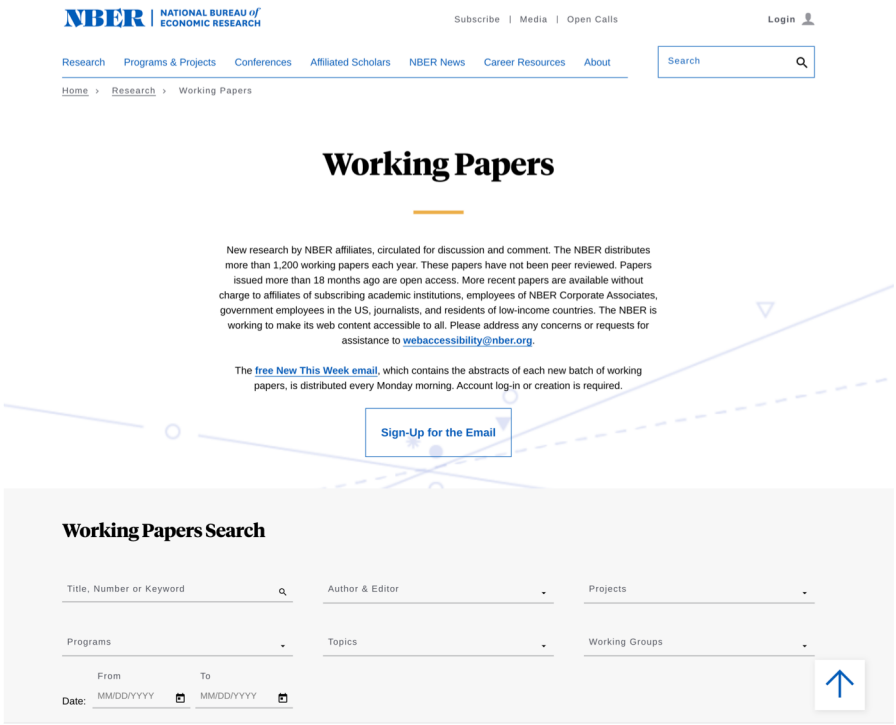
- But you can work by yourself or in a group of up to 4 people
- Submit one assignment per group (with everyone's name)
- E-mail me if you need help finding a group (jdavis5@uoregon.edu)!

Graduate students only: Paper Exploration

Write a (roughly) 2-page memo that addresses the following details of the paper:

- What is the research question?
- How does it relate to other (specific) papers we discussed in class?
- What is the main result? (This is usually an estimate in the paper.)
- What do we learn from the paper?
- If you wanted to write a follow-up paper, how might you extend or improve on this paper?

Due Wednesday, June 1st on Canvas



Final Exam

Wednesday, June 8th at 2:45pm in the usual classroom

40% of your grade

Will be similar to homeworks

Open note but no collaboration or technology

How will you be assessed?

EC428
Homework: 60%
Final Exam: 40%

EC528
Homework: 48%
Paper Exploration: 12%
Final Exam: 40%

Final grades may be curved using a machine learning algorithm subject to the constraint that I won't curve your grades down

Last time: Not much of a curve among the As and Bs

Questions?

What is this class?
Behavioral & Experimental Economics

"Study of the allocation of scarce means to satisfy competing ends."

Model behavior of firms and consumers using mathematical models

Hopefully informative about how the world actually works

Theoretical predictions assume "other things are held constant"

i.e. the **ceteris paribus** assumption

The “Standard Economic Model”

1. Make choices by maximizing utility subject to budget constraint
   - Internalize all relevant information and opportunity costs
   - Optimize over all possible choices
   - There is a single value of a good
   - Utility depends only on own consumption

2. Choose risky prospects using expected utility

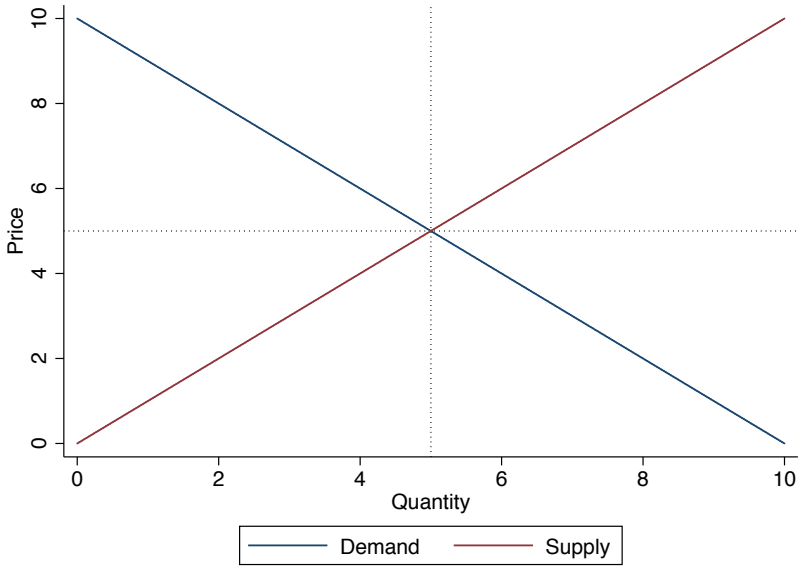
3. Make decisions over time using discounted utility

Example: Supply and Demand

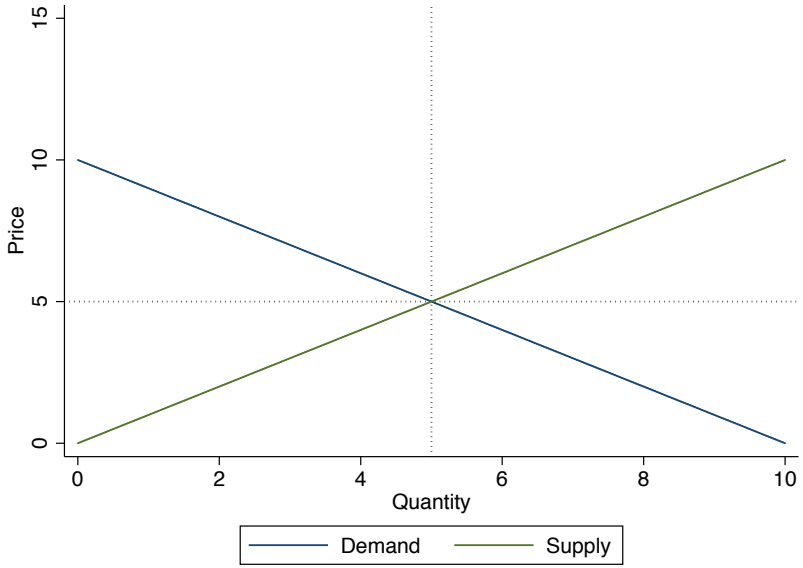
Most basic model in economics

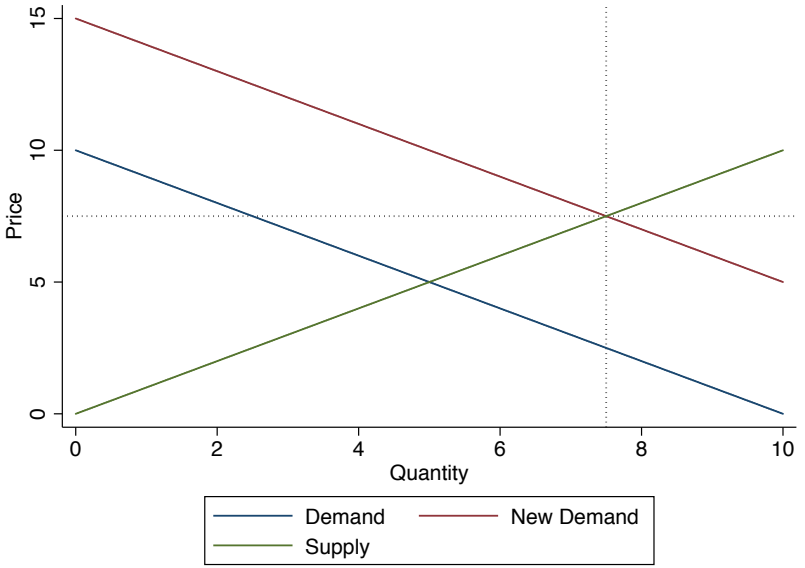
Prices and quantities determined by intersection of supply and demand curves

How do we test if it's a good model?



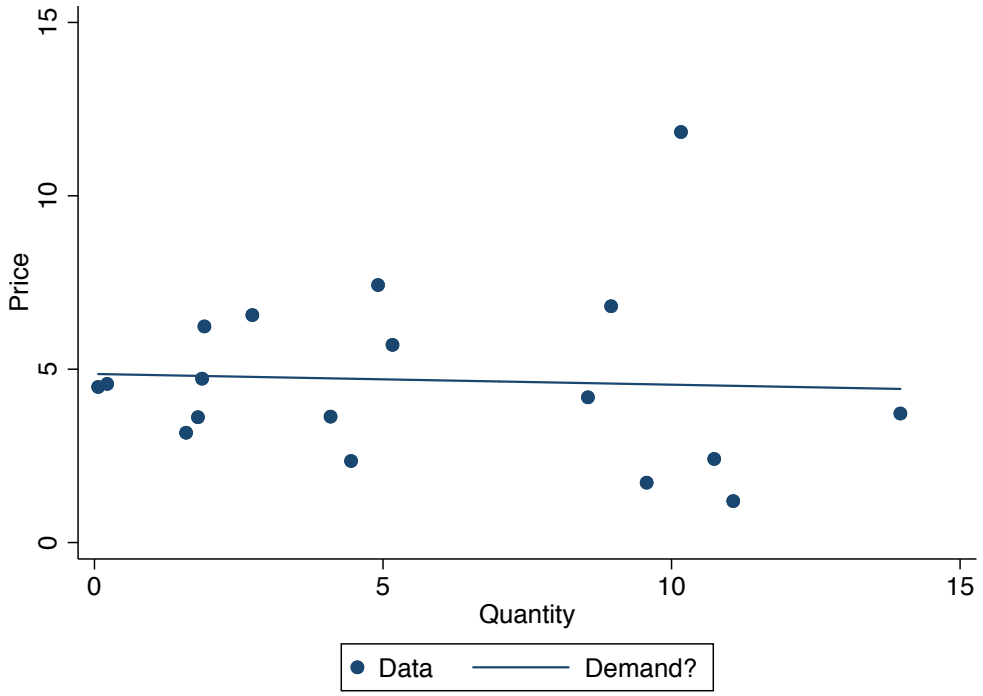
Example: Supply and Demand





Prediction: Increase in Demand -> Higher Price and Higher Quantity

Is theory broken?

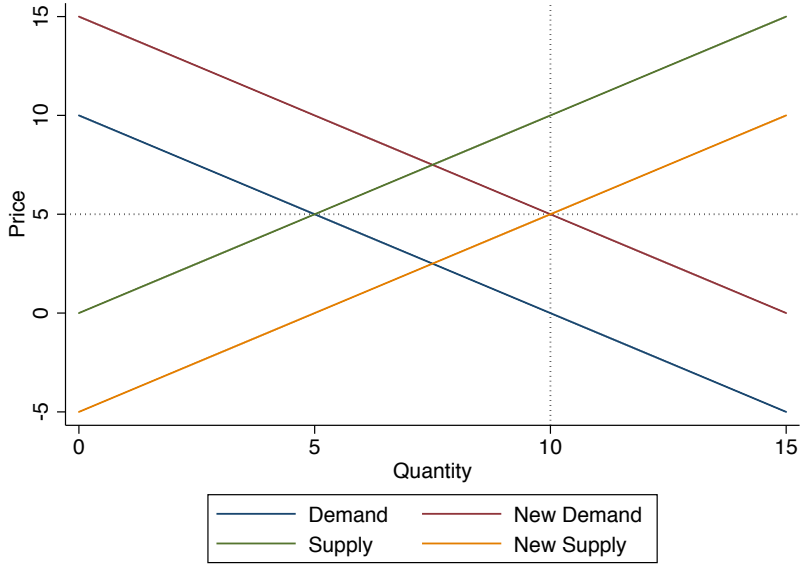


Note. This data is made-up, but it is not unrealistic.

What went wrong?

Prediction: Increase in Demand -> Higher Price and Higher Quantity**, holding supply constant**

In the real-world, rarely see changes happen in isolation



Another example:

How many hats and pairs of shoes should Diana buy?

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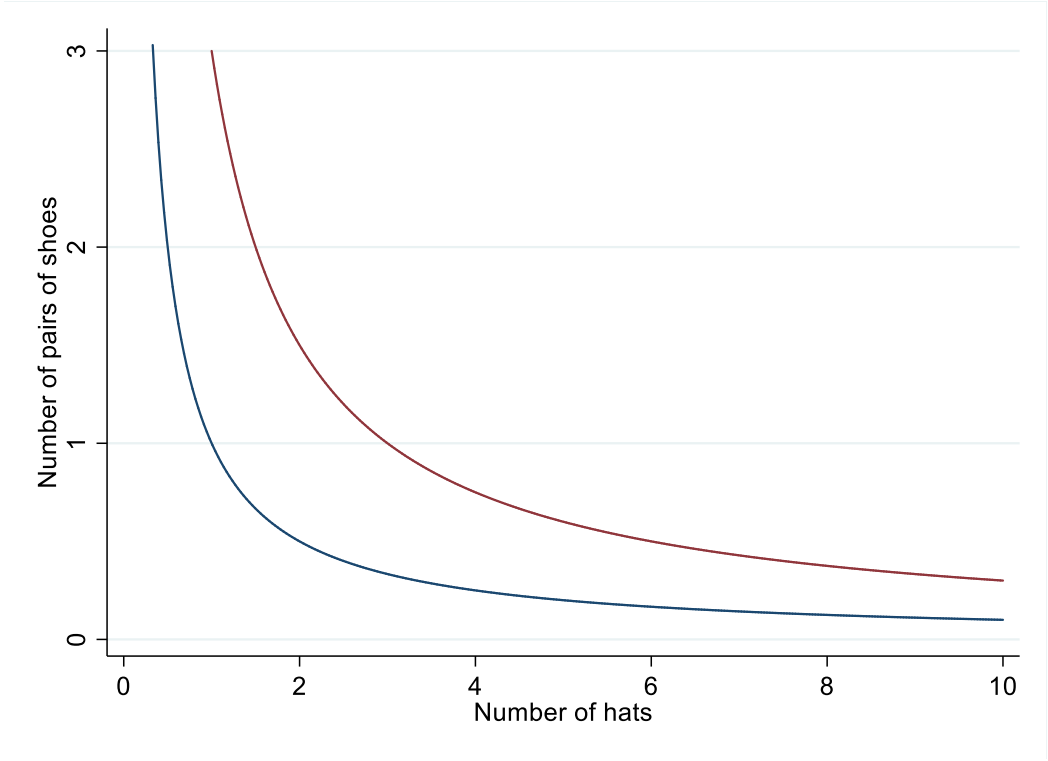

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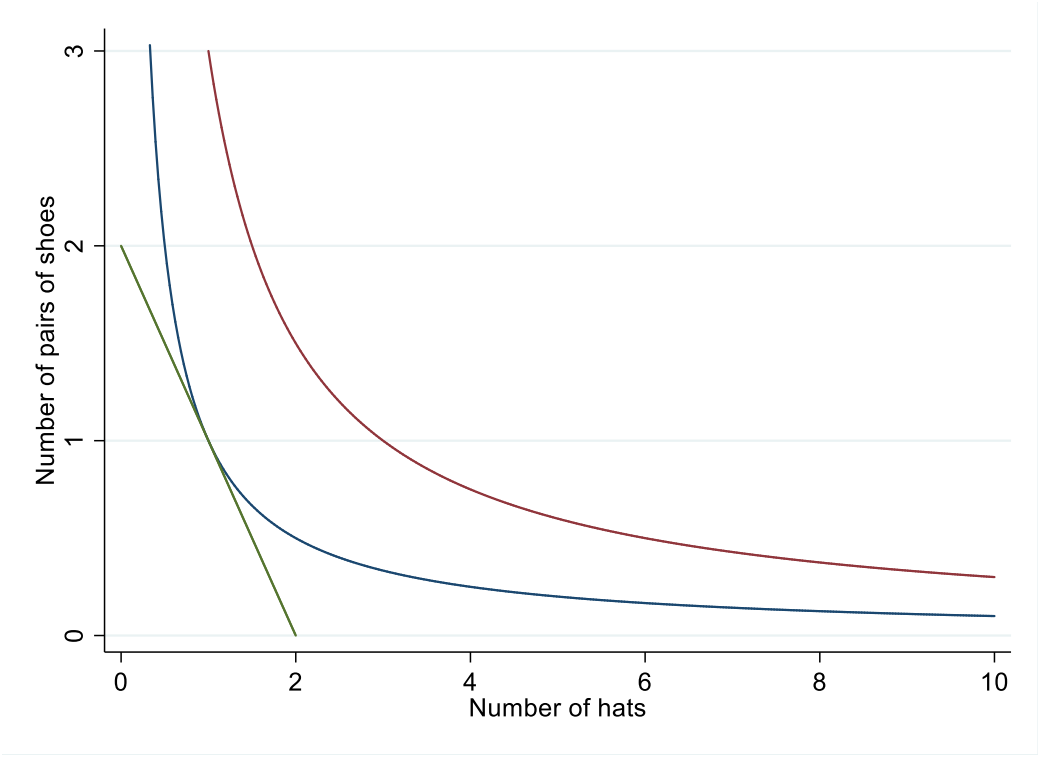

What are some assumptions this model makes?

Assumptions

1. Diana can rank every combination of hats and pairs of shoes.
2. If Diana prefers bundle A to B and B to C then she prefers A to C.
3. Diana is *rational* and does not make mistakes when shopping.

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1. Diana can rank every combination of hats and pairs of shoes.
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3. Diana is *rational* and does not make mistakes when shopping.

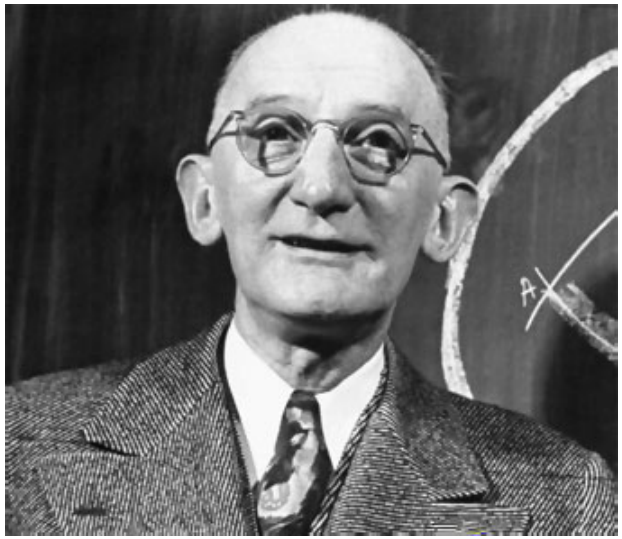
1 and 2 imply that we can draw indifference curves.

3 tells us that indifference curves are informative about decisions.

Are these "good" assumptions?

Thurston (1931)

Research Question: Can consumer preferences be adequately represented by indifference curves?



Thurston (1931): Theory

The constant method takes the following form. One of the combinations such as eight hats and eight pairs of shoes is chosen as a standard and each of the other combinations is compared directly with it. Thus in Figure 5 we should expect to find that if the subject were asked to choose (eight hats and eight pairs of shoes) or (seven hats and fourteen pairs of shoes) he might be quite willing to give up one of the hats in order to possess six additional pairs of shoes, assuming of course that the money cost to him were the same. We should therefore expect to find the point *B* marked plus because the combination at that point is preferred to that of the standard at *A*. This may be judged from Figure 5 because the point *B* lies on an indifference curve at a higher elevation of satisfaction than the point *A*.

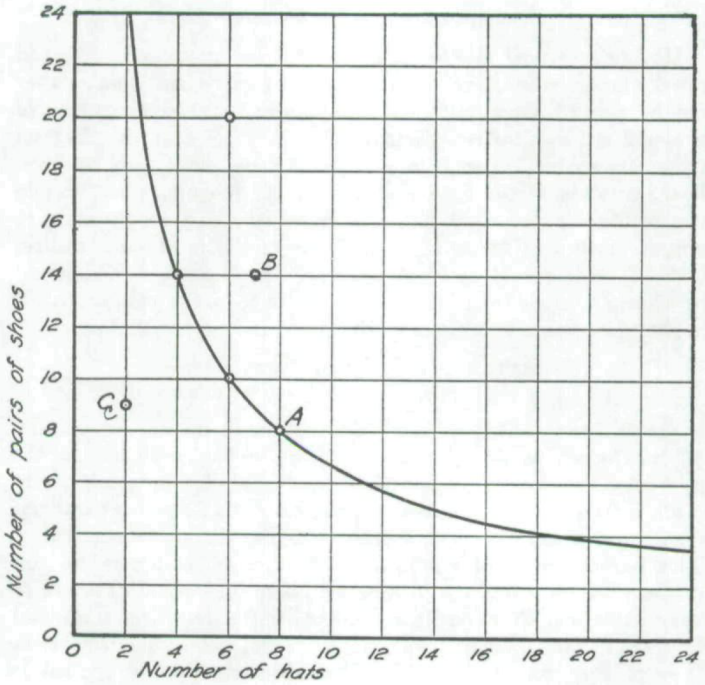


FIGURE 5

Thurston (1931): Which of the alternatives would give you more satisfaction if they cost the same?

8 hats and 8 pairs of shoes **or**
6 hats and 9 pairs of shoes

8 hats and 8 pairs of shoes **or**
4 hats and 15 pairs of shoes

8 hats and 8 pairs of shoes **or**
9 hats and 3 pairs of shoes

Etc.

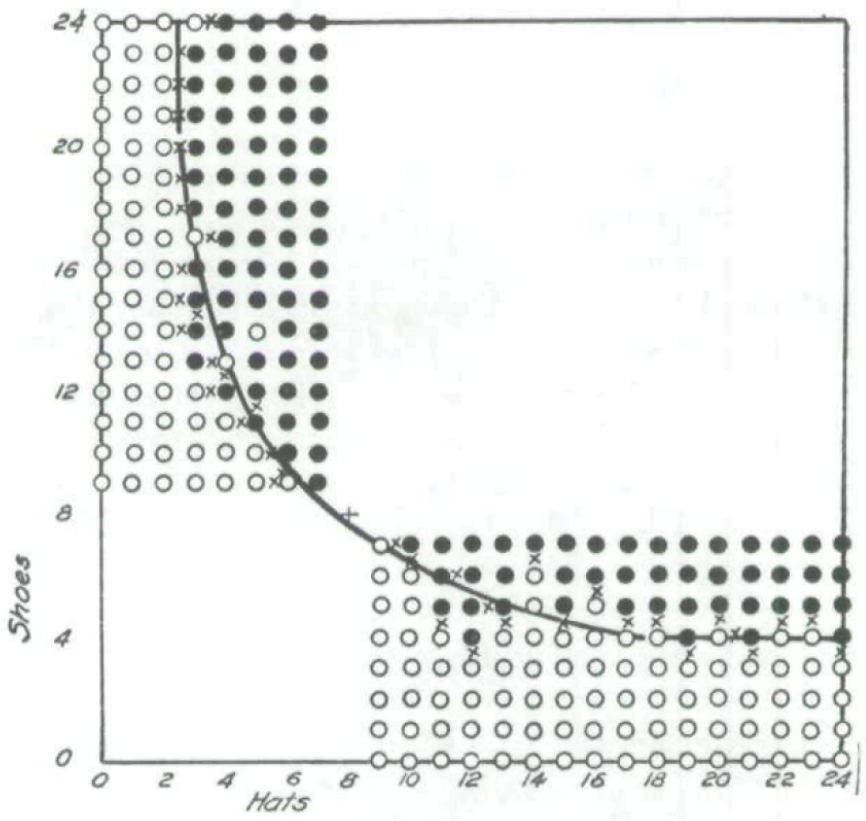


FIGURE 7

Thurston (1931)

"agreement between the predicted curves and the distributions of black and white circles is quite satisfactory." (p. 163)

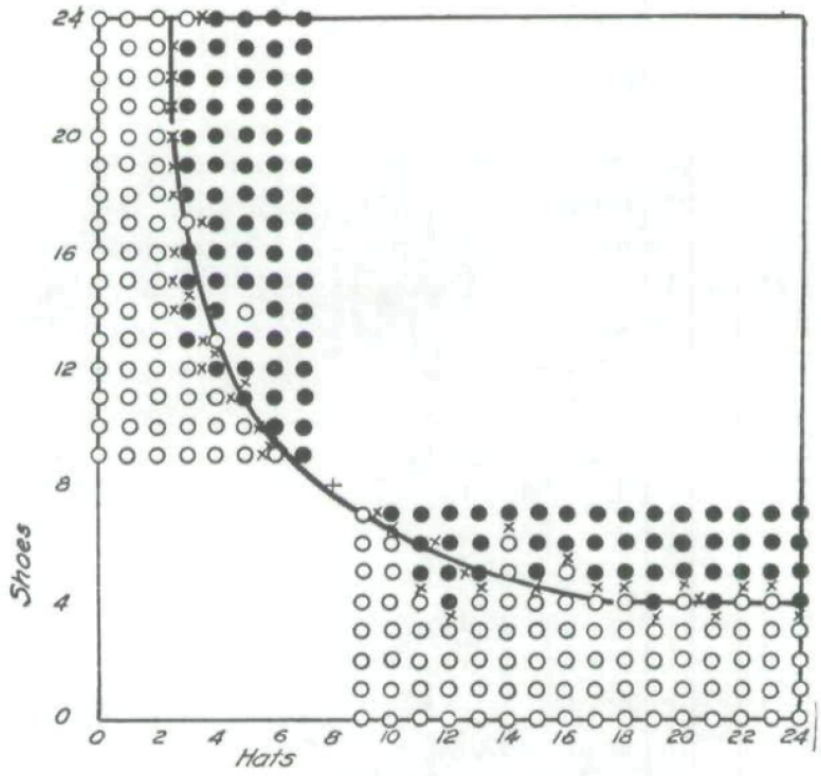


FIGURE 7

Recap of Thurston (1931)

One of first experiments in economics.

Collects new data to answer question at hand: does theory of indifference curves match reality?

Finds that theory is “ satisfactory.”

What do you think? Are you convinced by Thurston’s results?

Economists' Skeptical Reaction to Thurston

*"It is questionable whether **a subject in so artificial an experimental situation** could know what choices he would make in an economic situation; not knowing it is almost inevitable that he would, in entire good faith, systematize his answers in such a way as to produce plausible but spurious results."*

- Wallis and Friedman (1942)

Economists' Skeptical Reaction to Thurston

"For a satisfactory experiment it is essential that the subject give ***actual reactions to actual stimuli****.... Questionnaires or other devices based on conjectural responses to hypothetical stimuli do not satisfy this requirement.* ***The responses are valueless because the subject cannot know how he would react****."*

- Wallis and Friedman (1942)

The Lasting Impact of Thurston (1931)

In response to Wallis and Friedman's critique, economics experiments are expected to have **real stakes**.

Ex: Thurston could have randomly selected one of the choices and given the participant their more preferred option.

Often, participants earn real money by participating.

Chamberlin (1948)

Research Question: How close does an imperfect market (without recontracting) come to the efficient outcome?

Subjects: “The experiment has been carried out in a number of classes in economic theory, with the students offering themselves up as the guinea pigs.” (95)

Rules: Don’t show anyone your card!

Red cards: Sellers
Black cards (with blue back): Buyers

Number on card:
- Willingness to accept (WTA) for sellers (Don’t sell for less)
- Willingness to pay (WTP) for buyers (Don’t buy for more)

Face/Ace cards (shouldn’t be any, but if I missed one):
- Count as a 10 for buyers
- Count as a 1 for sellers

The Market

Find someone to trade with and negotiate a price (p)

Surplus (Measured in pieces of candy)

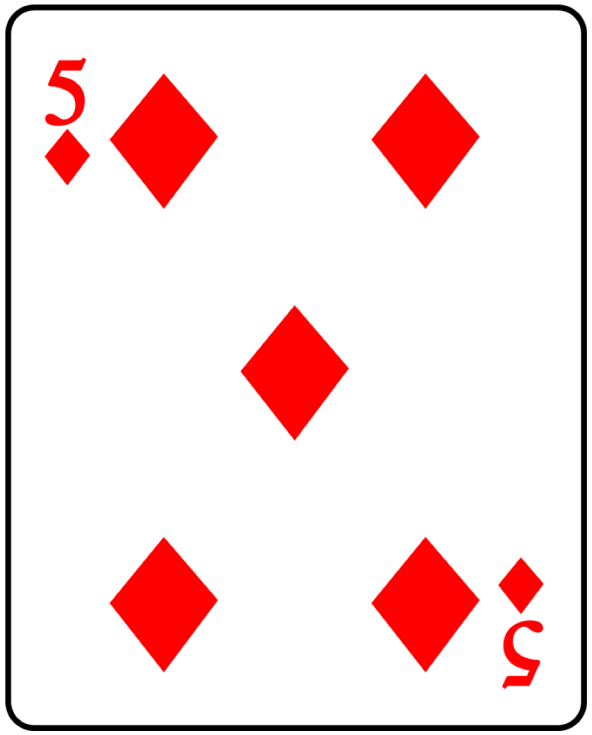
Seller = p-WTA

Buyer = WTP-p

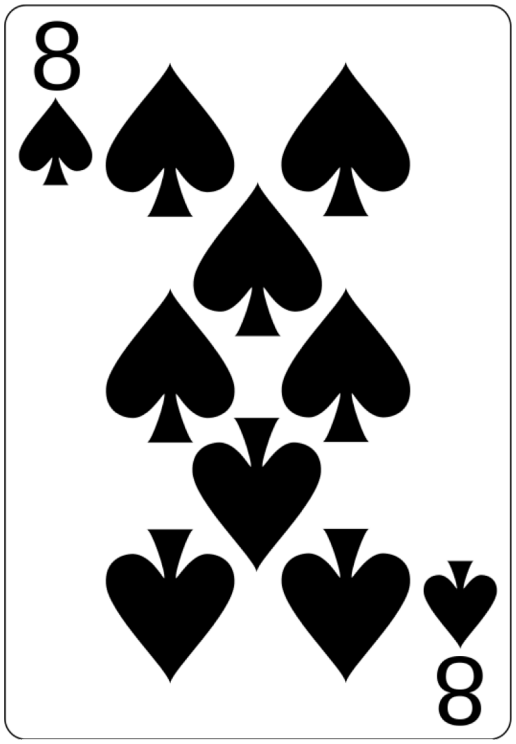
When you make a trade, come register it at the front and get your candy

I will let you know when there is 60 seconds left

Example



Seller



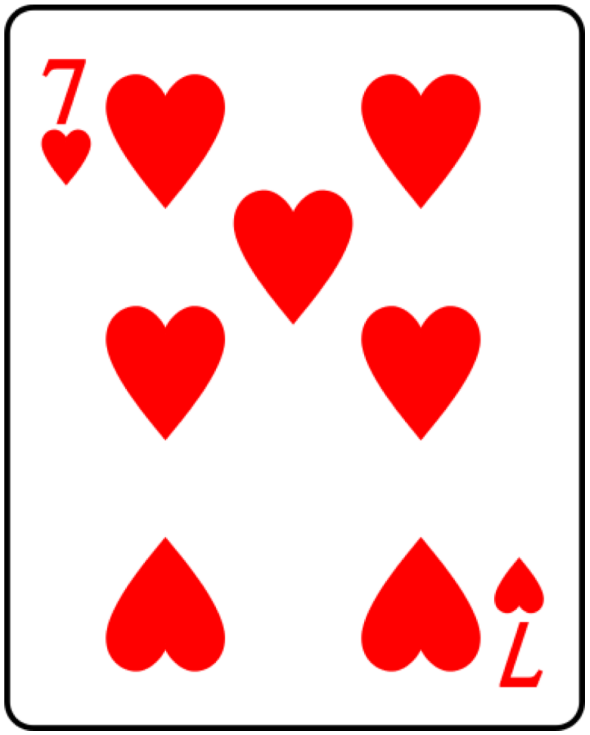
Buyer

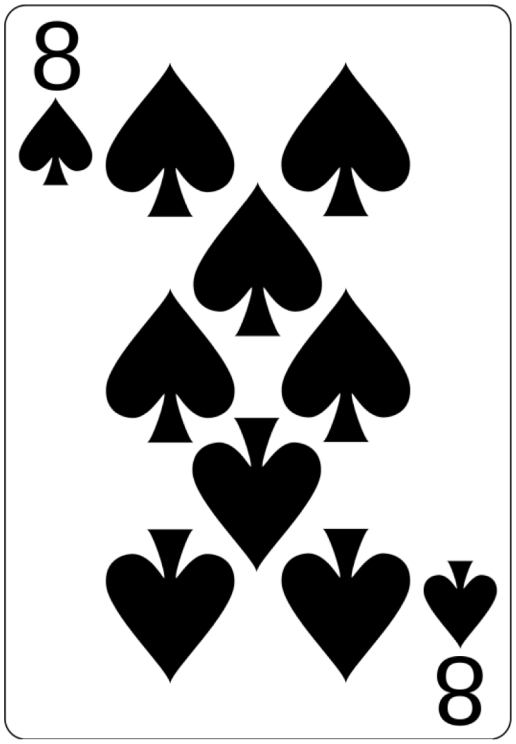
Trade for p=7

Buyer surplus = 1

Seller surplus = 2

Another Example





Seller

Buyer

Trade for p=7

Buyer surplus = 1

Seller surplus = 0

Let's play!

Find someone to trade with and negotiate a price (p)

Surplus (Measured in pieces of candy)

Seller = p-WTA

Buyer = WTP-p

When you make a trade, come register it at the front and get your candy

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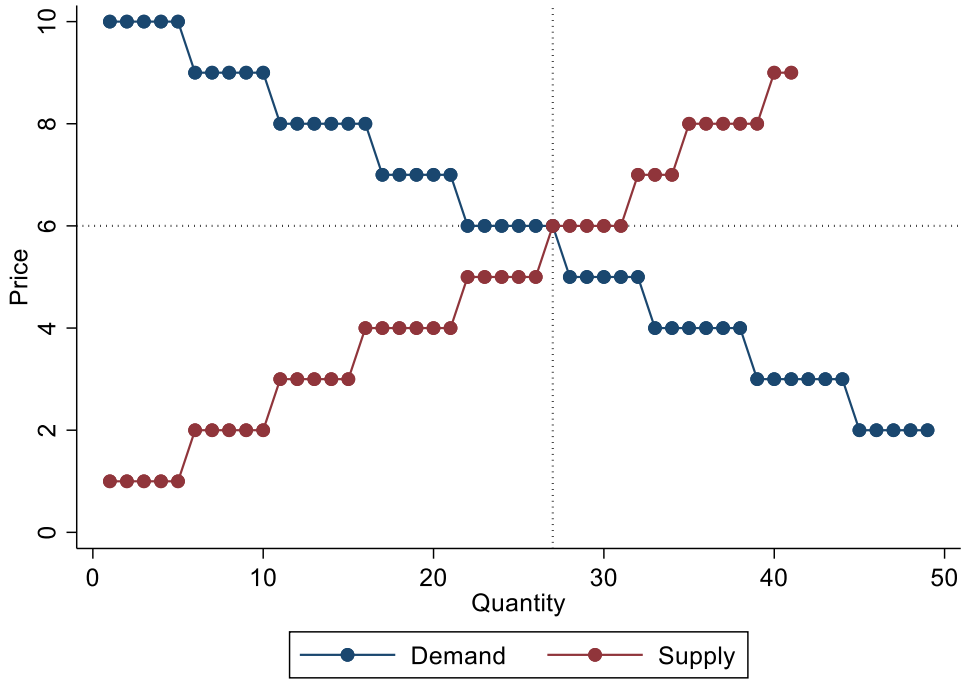
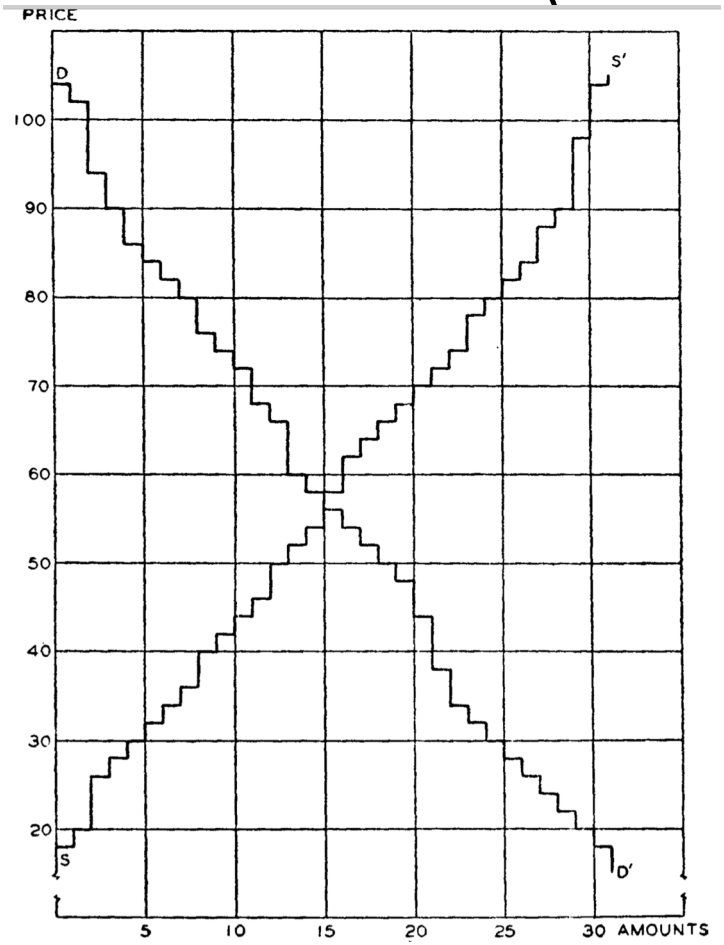
Supply and Demand (If all cards used)

Efficient Price: 6
Actual Avg Price: 5.67
Efficient # Trades: 27
Actual # Trades: 15
Efficient Surplus: 129
Buyer Surplus: 52
Seller Surplus: 77

No trades if WTP<6
No trades if WTA>6



Chamberlin (1948): Results from one session



Transactions			Market Schedules	
B	S	P	B	S
56	18	55	104	18
54	26	40	102	20
72	30	50	94	26
84	34	45	90	28
44	44	44	86	30
102	42	42	84	32
80	20	40	82	34
60	28	55	80	36
48	40	45	76	40
76	36	45	74	42
94	52	55	72	44
68	58	62	68	46
66	46	55	66	50
82	32	58	60	52
90	72	72	58	54
104	54	54		
52	50	50	56	58
86	64	64	54	62
74	62	69	52	64
			50	66
Left Over			48	68
			44	70
38	68		38	72
50	66		34	74
28	82		32	78
32	88		30	80
18	90		28	82
26	84		26	84
22	104		24	88
24	78		22	90
30	80		20	98
20	98		18	104
34	74			
58	70			

Equilibrium sales 15
Actual sales 19

Equilibrium price 57 (56–58)
Average of actual prices . . . 52.63

Overall Results

Average prices were lower than the equilibrium price in 39 of 46 trials

(And average prices were probably lower in our class)

“There seems to be nothing in the problem as defined which would account for it…” (p. 99)

Recap of Chamberlin (1948)

Observed market outcomes in simulated market

Key Features and Take-aways:

- Student subjects
- Researcher knows supply and demand curves by using “induced valuations”
- Results not consistent with neoclassical predictions

What is this class?

Behavioral and Experimental Economics

Thurston (1931) and Chamberlin (1948) test if theory matches reality.

Two of the first experiments in economics.

Sometimes find that predictions don’t happen in reality.

What is this class?

Behavioral and Experimental Economics

A key challenge will be evaluating the quality of evidence

Will spend all of tomorrow's class reviewing empirical methods

Behavioral and Experimental Economics

"Behavioral" part of the course is about how people actually behave

Some schools call Behavioral Economic" "Psychology and Economics"

Origins of Behavioral: “you cannot be serious”

Simon (1955):

> *“My first empirical proposition is that there is a complete lack of evidence that, in actual human choice situations of any complexity, these computations can be, or are in fact, performed.”*

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Won Nobel Prize in Economics in 1978.

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Simon (1955):

> *“My first empirical proposition is that there is a complete lack of evidence that, in actual human choice situations of any complexity, these computations can be, or are in fact, performed.”*

Won Nobel Prize in Economics in 1978.

But ended up in a psychology department.

Origins of Behavioral: “you cannot be serious”

Simon (1955):

> *“My first empirical proposition is that there is a complete lack of evidence that, in actual human choice situations of any complexity, these computations can be, or are in fact, performed.”*

Failed to influence economics because he didn’t actually show standard economic model is not a good approximation to human behavior.

Have you ever failed to keep a new years resolution?

Have you ever regretted eating or drinking too much?

Have you ever been surprised by how expensive something was at checkout and bought it anyway?

A bat and a ball cost $1.10 in total. The bat costs $1.00 more than the ball. How much does the ball cost?

In reality…

We have limited attention and make mistakes.

We dislike change.

We struggle to stick with New Year’s Resolutions.

We don’t save enough for the future.

We respond too much to new information.

EDUCATION

Economics: The Discipline That Refuses to Change

Behavioral economics upended the idea that humans act solely in their rational self-interest. So why do most undergrads barely learn anything about the field?

ANTARA HALDAR DEC 14, 2018

ALEXANDER SPATARI / GETTY

The New York Times

Opinion

Why Is Behavioral Economics So Popular?

The recent vogue for this academic field is in part a triumph of marketing.

By David Gal

Dr. Gal is a professor of marketing.

Oct. 6, 2018

Important question: Who cares?

Standard economic models have several advantages:

- Standard models are relatively simple (humans are complicated)
- Yield a benchmark of how people “should” behave
- And in many cases, they are accurate enough to be useful

Did you buy something you didn’t want today?

Do you know roughly what you can afford to spend?

So why do we need behavioral economics?

Need to understand how people actually make decisions if we want to understand actual behavior or to change behavior

For example:

- Getting people to eat healthier or to exercise more
- Getting people to save more
- Getting people to buy your product

Normative versus Positive Models

Economics is usually **normative** – saying what people should do.

Behavioral economics is **positive** – describing what people actually do.

Important to distinguish when normative and positive answers differ.

Richard Thaler's Gauntlet

1. Even if people are not capable of actually solving the complex problems, they behave **"as if"** they can.

Example: Excellent Pool or Billiards Players

Richard Thaler's Gauntlet

1. Even if people are not capable of actually solving the complex problems, they behave **"as if"** they can.
2. If the stakes are raised, people will have greater incentive to think harder, ask for help, or do what is necessary to get the problem right.

Richard Thaler's Gauntlet

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3. Experiments are "one-shot" games. In the "real world," people have opportunities to learn.

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3. Experiments are "one-shot" games. In the "real world," people have opportunities to learn.
4. "Suppose there were people doing silly things like the subjects in your experiments, and those people had to interact in competitive markets, then…"

Application: Racial Discrimination

Is there race-based discrimination in the labor market?

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Is there race-based discrimination in the labor market?

First, what is **race-based discrimination**?

Employers paying black workers less than white workers for same work

Becker (1957): Economics of Discrimination

Suppose all White and Black workers are identical other than race

Employers differ in their level of racism

If employer is very racist: hire only White workers because willing to pay to avoid having black workers

If employer isn't racist: hire only Black workers because cheaper

Becker (1957): Economics of Discrimination

What determines the Black-White wage gap?

Marginal Racist is employer who hires both Black and White workers

- The premium they are willing to pay to work with white workers is White-Black wage gap

- All other employers will hire either all White or all Black workers
- Since workers only differ by race, wages can only differ by race

Critique of the model

- Discrimination is costly (and stupid for a business owner)
- Discriminating employers hire more expensive workers when could have hired cheaper labor!
- Non-discriminating firms earn hire profits
- Competition should force discriminating firms out of market
- No discrimination in the long-run!

Richard Thaler's Gauntlet

1. Even if people are not capable of actually solving the complex problems, they behave **"as if"** they can.
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3. Experiments are "one-shot" games. In the "real world," people have opportunities to learn.
4. **"Suppose there were people doing silly things like the subjects in your experiments, and those people had to interact in competitive markets, then…"**

50 years later!

Kerwin Kofi Charles and Jonathan Guryan

University of Chicago and National Bureau of Economic Research

We test the predictions from Becker's (1957) seminal work on employer prejudice and find that relative black wages (*a*) vary negatively with the prejudice of the "marginal" white in a state, (*b*) vary negatively with the prejudice in the lower tail of the prejudice distribution but are unaffected by the prejudice of the most prejudiced persons in a state, and (*c*) vary negatively with the fraction of a state that is black. Our estimates suggest that one-quarter of the racial wage gap is due to prejudice, with nontrivial consequences for black lifetime earnings.

Where do we go from here?

Next: Econometrics Primer

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Unit 1: How people make choices

Where do we go from here?

Next: Econometrics Primer

Unit 1: How people make choices

Unit 2: How people make choices with risk

Where do we go from here?

Next: Econometrics Primer

Unit 1: How people make choices

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Unit 3: How people make choices over time

Where do we go from here?

Next: Econometrics Primer

Unit 1: How people make choices

Unit 2: How people make choices with risk

Unit 3: How people make choices over time

Unit 4: How people learn from new information

Where do we go from here?

Next: Econometrics Primer

Unit 1: How people (and occasionally firms) make choices

Unit 2: How people make choices with risk

Unit 3: How people make choices over time

Unit 4: How people learn from new information

Unit 5: How people interact with other people