

# Economists, Damages & Daubert Pitfalls

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# Litigation Poses Difficult Questions

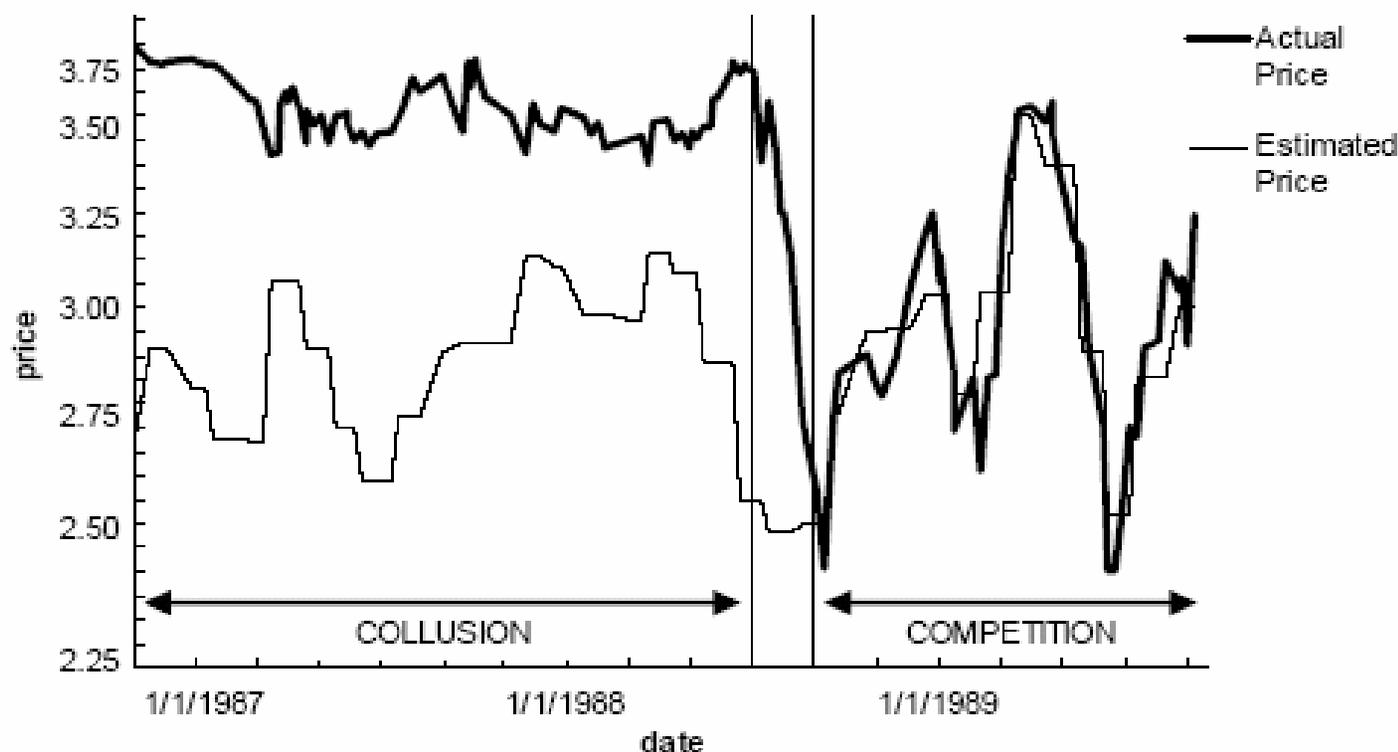
- What would profits have been absent some illegal behavior?
  - Patent infringement
  - Antitrust violation
- Will this merger raise price?
- How much did this conspiracy raise price?
- These questions compare two states of the world, but only one is observed

# How Do We Predict the Unobserved State of the World?

- Natural experiments
  - Only as good as the data
- Classroom experiments
  - FCC used experiment to predict effects of ATT-Comcast
- Structural models
  - Driven by behavioral assumptions

# Natural Experiments are Only as Good as the Data

- Compare control vs. treatment group
  - Was everything else held constant?



*Figure 1. Actual and estimated prices for frozen perch at auction.*

# “Structural” or “Behavioral” Models

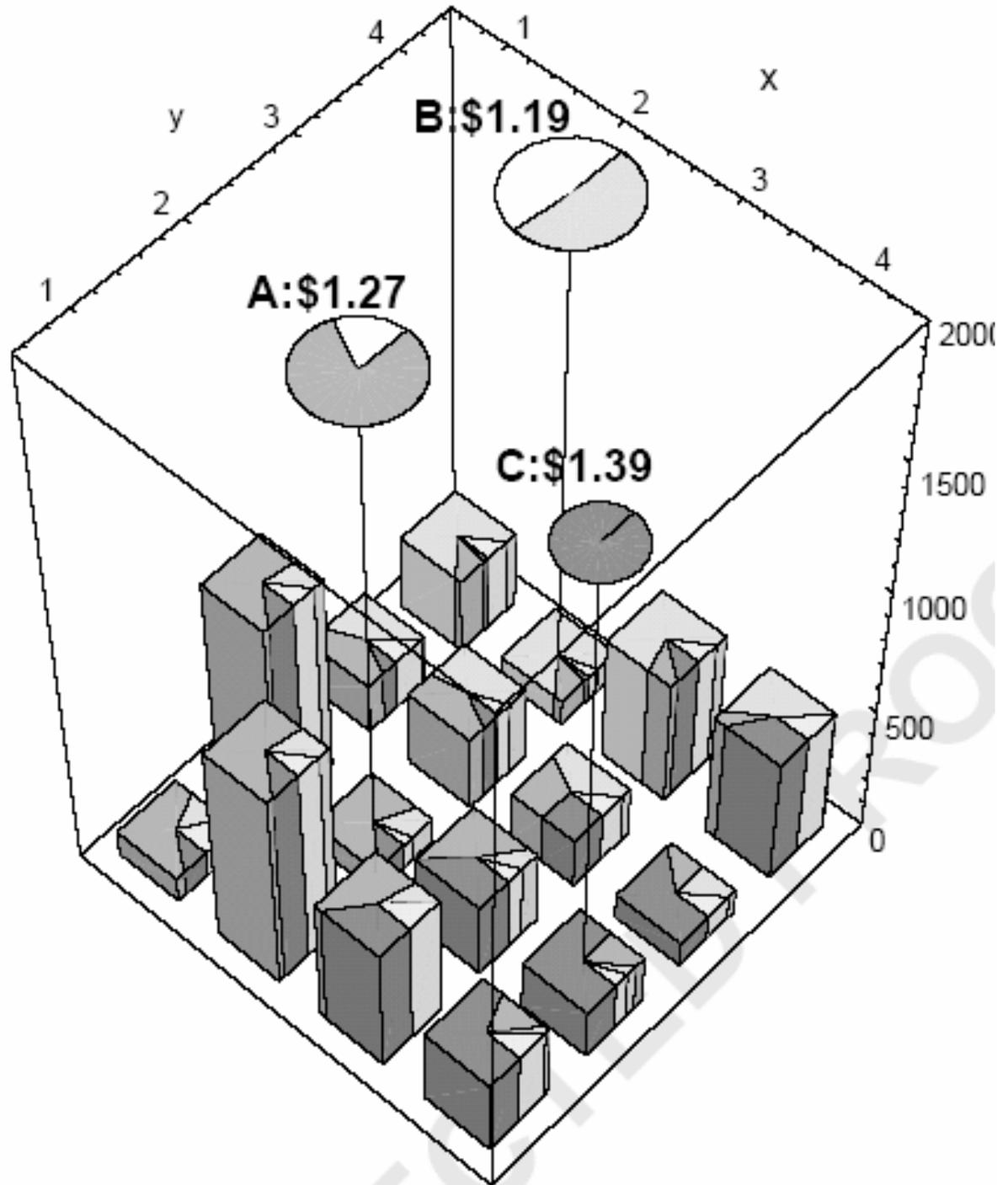
- *Back End:* Behavioral Model
  - Consumer, firm (& retailer) behavior
  - Equilibrium is result of their interaction
- *Front End:* Parameters “feed” the model
  - Estimation (can be costly, fruitless)
  - Calibration to observed data, like margins
- *Equilibrium*
  - Current equilibrium (observed)
  - Post Merger equilibrium (predicted)

# Structural Models

- Models tell you
  - What matters, why, and how much
- Models force economists to “put cards on table”
  - Assumptions are explicit;
  - Clear link from evidence to conclusions
  - Attack “linkage” (model) or attack evidence
- Make sure model can explain observed state of the world before being used to predict “but for” world

# Example Parking

- Key parameters
  - cost of walking
  - locations of merging non-merging lots
  - location of offices
  - capacity of lots
- Capacity constraints of merging lots attenuate merger effects.
- Competition very localized



# Other Structural Models

- Oral Auctions
  - Losing bidder determines price
  - Merger effect is frequency of 1-2 finish times distance between second and third-lowest costs
- Bargaining
  - Alternatives to agreement determine terms of agreement
  - Example: “Any willing provider” laws
- Bertrand
  - Demand critical

# Example: Models for IP Damages

- Reasonable Royalties
  - if infringer had legally licensed patent
  - *Question:* What does “but for” world look like
- Lost Profits:
  - if infringer had never existed
  - *Question:* What does “but for” world look like

# Courts Compute “but for” World Using Crude Rules of Thumb

- Drawing bright lines where there are none
  - “acceptable” vs. “unacceptable” substitutes
  - similar problem to market delineation in antitrust
- Infer lost sales from market shares
  - With non-infringing competitors
- Pre-infringement growth used to project sales based on company documents.
  - Ignore market shocks that occur post-infringement

# Models Account For Market Forces

- Price Erosion
  - Infringement leads to lower prices
- Quantity Accretion
  - Infringement leads to higher quantity
- Shocks
- Structural Economic Models take account of all these factors simultaneously

# Models vs. Rules of Thumb

- Infringement Damages (% patentee profit)

Methodology	Elasticity of Demand		
	-0.5	-1	-2
Structural model	19.7%	7.4%	3.8%
Market-share rule (no erosion)	17.7%	17.7%	17.7%

# Online Games (if time)

- <http://www.antitrust.org/simulation.htm>  
!

# How to Challenge Economists

- “An expert is someone who knows some of the worst mistakes in his subject and who manages to avoid them” --Werner Heisenberg (1969)
- Worst mistakes occur when practitioners use models to predict the future without first making sure that it can accurately describe the present.
- Courts give a break to plaintiffs in damages cases
  - Lower burden of proof
  - But assumptions can be potentially tested
  - Is my number better than yours?

## *Concord v. Brunswick*

“Neither the Daubert analysis nor the Federal Rules of Evidence requires a district court to admit opinion evidence that is connected to existing data only by the ipse dixit of the expert. **A court may conclude that there is simply too great an analytic gap between the data and the opinion proffered.** A court must focus on the reasonableness of using a particular approach, along with the expert's particular method of analyzing the data thereby obtained, to draw a conclusion regarding the particular matter to which the expert testimony was directly relevant.”

# Example: Not Fitting the Data

## *Concord Boat v. Brunswick*

- Structural model predicted 50% plaintiff share in “but-for” world of no loyalty discounts.
- Structural model could NOT explain observed 75% share before loyalty discounts began.

# How Well Must Model Fit?

- Models are abstractions that can never be perfect descriptions of the real world
- What matters is not whether the model is unrealistic in any way, but rather whether it is unrealistic in ways likely to make it misleading
- It must fit better than the alternative
  - “Some number beats no number”

# Rise of Structural Models

- 1995 IBC-CBC → challenge
  - Product and geographic delineation problems. White pan bread in Chicago
- 1996 L'Oreal-Maybelline → no challenge
  - L'Oreal did not compete with Maybelline despite big shares
- Both Cases, models fit the facts of the industry

# Thesis → Antithesis

- Ten years building merger models
  - Focus on methodological innovation
- Dave Scheffman critique
  - “fit accompli”: Does the models fit the facts?
  - Makes cases too easy to bring (false positives)
  - Huge logical leap from retail elasticities to upstream price increases
    - What about intermediate steps?

## From Vanderbilt to the FTC

	Academic	Practitioner
Concern	Methodological innovation	How well is methodology applied to case
Outcome	Demonstrate policy tradeoffs	Need an answer
Check & balance	Peer review	Adversarial litigation

# Thesis → Antithesis → Synthesis

- “A Daubert Discipline for Merger Simulation”
  - Gregory J. Werden, Senior Economic Counsel, U.S. Department of Justice
  - David Scheffman, LECG & Adjunct Professor at Vanderbilt
- If you use models, must fit facts of case  
Every assumption should be:
  - supported by evidence, or
  - subject to sensitivity analysis
- Mergers vs. Damages

# Structural Models are Only Tools

- At best, can focus investigation by identifying:
  - “What” matters, “why,” and “how much”
  - Offer way to consider efficiencies
- At worst, ignore important industry features
  - Misleading predictions
  - Divert attention from more probative analysis

# Should we use Models?

## Three Answers

- YES: Behind every economist's story is a model
  - By making assumptions explicit, one can test model's predictions
- NO: Less Formal analysis is good enough
  - Is it vulnerable to attack?
  - Dueling "opinions"
- SOMETIMES: But only as a complement to, not a substitute for, other evidence

# Warnings

- Don't get bogged down in estimation
  - time consuming, often with little payoff
  - With more than a handful of goods, difficult to get good estimates.
  - Lots of practical difficulties
  - Diverts attention from other evidence?
    - Surveys
    - Natural experiments
- Ask your economist if her model can explain observable data.

# Take-Away 1 Advice to Practitioners

- It is possible to ask Daubert-like questions to assess model appropriateness and fit.
  - Does model accurately characterize observable data?
- For assumptions that matter to conclusions:
  - Gather evidence to support; or
  - Choose conservative assumption
- What would happen if we applied this standard to vertical stories?

# Take-Away 2 Advice to Practitioners

- Methodological tools are easily misused
  - When used, must fit with totality of evidence
  - Can be expensive; yet yield very little
  - Use Daubert if models don't fit facts
- Is a methodology necessary for defensive reasons?
  - Hard to critique methodology without replicating
  - Does some number beat no number
- Become better informed about methodologies
  - Avoid principal-agent problems
  - Pull the plug if economists run amuck