From Theory to Praxis: Quantitative Methods in Merger Control

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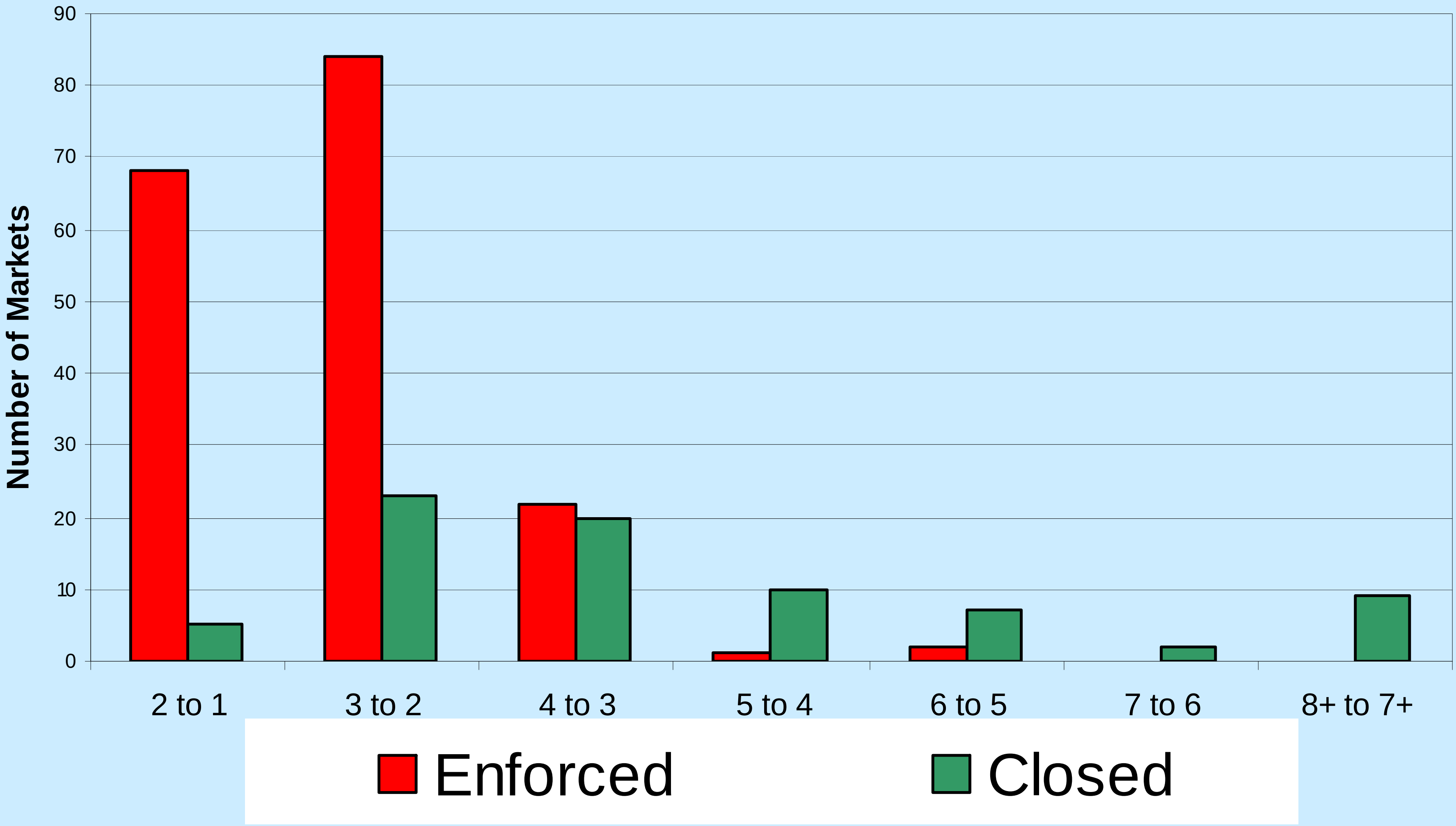
Outline

- I. Policy movement to effects-based merger analysis
- How do we determine merger effects?
  - II. Natural experiments
  - III. Model-based inference
    - Bargaining

Historic Opportunity for Economists

- To build on Mario Monti's antitrust accomplishments
  - Merger Guidelines; SIEC⇔SLC
  - Best Practices
  - Chief Economist
- ➔Moving away from "form" towards "effect"
  - Attorneys determine form,
  - Economists determine effect.

FTC Merger Data,1996-2003:
➔Structure just a starting point



What's Wrong w/Structural Presumptions?

- Market delineation draws bright lines even when there may be none
  - No bright line between "in" vs. "out"
- Market Shares may be poor proxies for competitive positions of firms
- ➔Market shares and concentration may be poor predictors of merger effects

What is Effect of Merger?

- "Effect" question compares two states of the world ("with" vs. "without" merger)
  - but only one is observed
- Two ways of drawing inference about unobserved state of world
  - Natural experiments
  - Theory-based inference

Natural Experiments

- *Control group* (without merger)
- *Experimental group* (with merger)
- ➔Difference between groups is estimate of merger effect.

- BIG questions
  - How well does experiment mimic merger effect?
  - Did you hold everything else constant?

Example: Consummated Merger

- *Control Group*: Pre-merger period
- *Experimental Group*: Post-merger period
- ➔Did price increase?

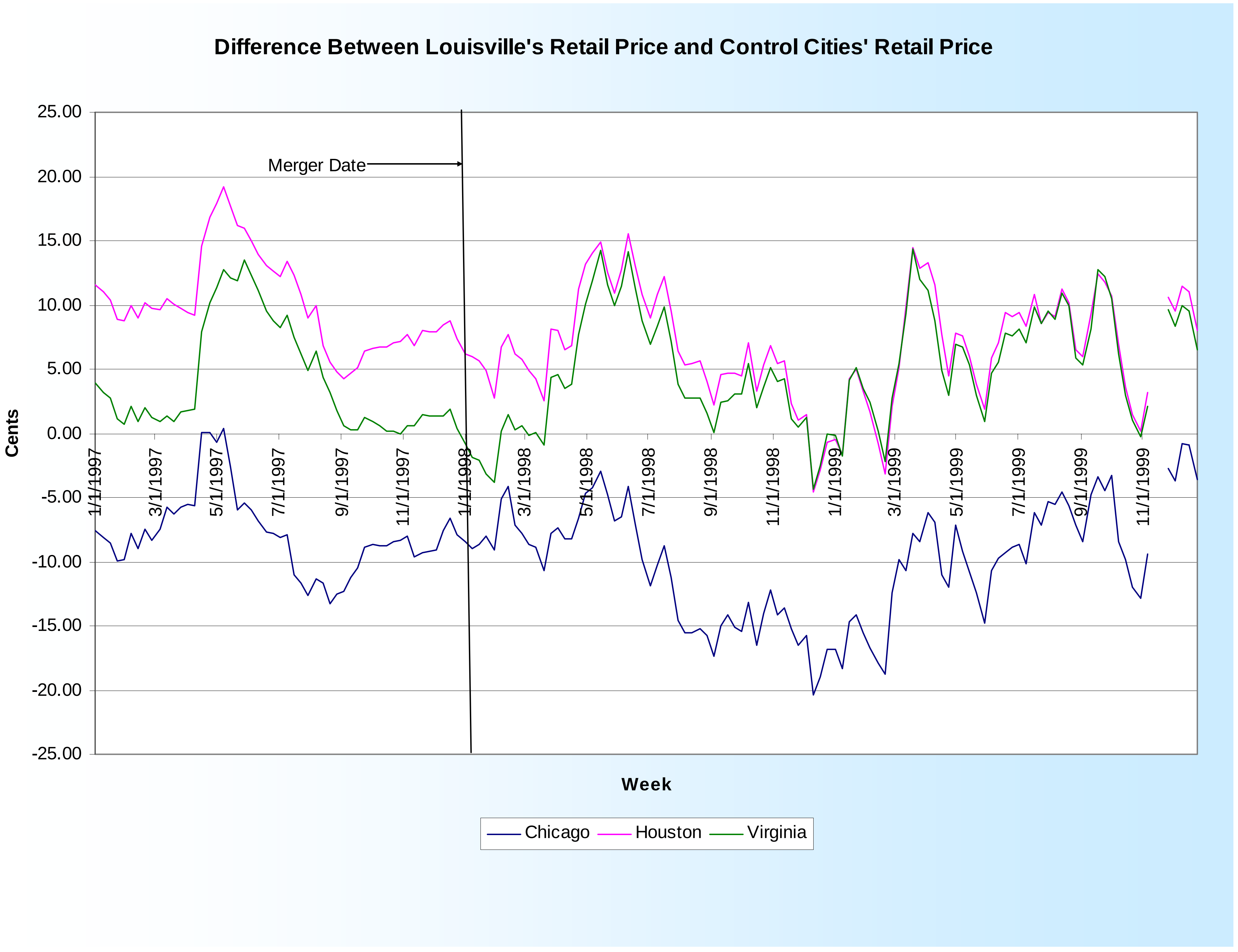
- BIG question: "Compared to what?"
  - Compared to "control" cities hit by the same demand and cost shocks
  - Economic Jargon: "Differences in Differences Estimation"
    - First difference: pre- vs. post-merger
    - Second difference: target vs. control cities

(Marathon/Ashland Joint Venture)

- Combination of marketing and refining assets of two major refiners in Midwest
- First of recent wave of petroleum mergers
  - January 1998
- Not Challenged by Antitrust Agencies
- Change in concentration from combination of assets *less* than subsequent mergers that were modified by FTC

Merger Retrospective (cont.): Marathon/Ashland Joint Venture

- Examine pricing in a region with a large change in concentration
  - Change in HHI of about 800, to 2260
- Isolated region
  - uses Reformulated Gas
  - Difficulty of arbitrage makes price effect possible
- Prices did ***NOT*** increase relative to other regions using similar type of gasoline



Difference Between Louisville's Retail Price and Control Cities' Retail Price
Merger Date
Cents
25.00
20.00
15.00
10.00
5.00
0.00
-5.00
-10.00
-15.00
-20.00
-25.00
1/1/1997
3/1/1997
5/1/1997
7/1/1997
9/1/1997
11/1/1997
1/1/1998
3/1/1998
5/1/1998
7/1/1998
9/1/1998
11/1/1998
1/1/1999
3/1/1999
5/1/1999
7/1/1999
9/1/1999
11/1/1999
Week
Chicago
Houston
Virginia

Theory Based Inference

- Posit pro- and anti-competitive merger theories
- Which one better explains the evidence?
- Example: Merger in bargaining markets

Bargaining Theory

From Oracle-Peoplesoft trial:

"the area [that] is the most indeterminate in all of antitrust economics where you have negotiations between two parties. There is no determinate theory that predicts the outcome."

Question: can economics predict effects of mergers in bargaining markets?

John Nash's "Split the Difference" Theory

- Same indeterminancy confounded John Nash
- Proved any "reasonable" solution would "split the difference"
- ➔*The gains from bargaining relative to the alternatives to bargaining, determine the terms of any bargain*
- What happens if a manager offers a $50 sales incentive to salespeople?
  - Makes salespeople more eager to reach agreement, so they reduce price by $25.

What Does Nash's Bargaining Theory Imply for Mergers?

- If merger changes alternatives to agreement, it also changes the terms of agreement.
- *Example*: Drugs bargaining with an insurance company to get onto a formulary.
  - If two substitutes bargain jointly, and no other substitute, merged company gets better price
- *Evidence*: how good are the alternatives to the merging products?

Bargaining Natural Experiment

- “Any-willing-provider” (AWP) laws compel managed care plans to include any health care provider willing to accept plan’s terms and conditions.
- Threat of exclusion from network induces competition between providers to be included in “network.”
- *Prediction*: Getting rid of this threat changes price

Bargaining Experiment (cont.)

- When a state adopts an any willing provider in the network, health expenditures increase by about 2%.
  - Mike Vita, “Regulatory restrictions on selective contracting: an empirical analysis of `any-willing-provider’ regulations,” Journal of Health Economics 20 (2001) 955–966