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$\leftrightarrow$ 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

Graph showing the number of markets in different market structures:
- 2 to 1
- 3 to 2
- 4 to 3
- 5 to 4
- 6 to 5
- 7 to 6
- 8+ to 7+

Colors:
- Red: Enforced
- Green: Closed
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
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%.