Merger Simulation Research:
Knowns and Unknowns

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FTC Microeconomic Conference

Outline

- Offer a discussion of some issues in the research of merger simulation and merger retrospectives

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- Hope to set up some of the discussion in the following panel

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  - estimate demand
  - use Nash-Bertrand model to back out marginal costs
  - simulate the effect of a merger as a change in ownership in the Bertrand pricing game

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  - measurement: how to measure the causal effect of the merger

How Well Does Merger Simulation Perform?

- Most of the evidence is for the narrow definition
- Overall results mixed
- Example the acquisition of Chex by GM
  - simulation (Nevo. 2000)
  - retrospective (Ashenfelter and Hosken, 2008)
- On average, merger simulation gets the right answer
  - simulation: 2% price increase for major involved brands (Chex, Cheerios, Wheaties)
  - retrospective: 3% increase for these brands

Example (cont.)

- However, patterns across brands do not match well
- Chex prices:
  - simulation: predicted to have a large increase (12% w/o cost savings)
  - retrospective: essentially no price increases
- Cheerios and Wheaties:
  - simulation: modest price increase (1%-2% w/o cost savings)
  - retrospective: larger price increase (3%-4%)
- The simulation results should not be surprising. Without costs savings, or other factors, the smaller firm is expected to have the larger price increase;
- How do we rationalize the retrospective numbers?

What can explain the differences?

- Problems with the simulation
  - demand estimates
  - price setting model
  - other factors: cost reductions, promotional activities, new products, etc.
- Problems with the retrospective
  - control group
  - event window
  - data measurement problems
- Think of what we need to rationalize numbers: (very!) large costs savings and mis-measured cross price elastictities (what about other brands, say Kellogg?)

Decomposing the effects

Peters (2006)

- Examines merger simulation of airline mergers in the 1980s.
- Finds that the merger simulations fail to predict accurately price changes in several of the mergers.
- Explores the sources of the errors in the simulations (changes in product offerings, shifts in demand, or changes in behavior).
- Finds that supply side behavior accounts for most of the difference

Are merger simulations hopeless?

- What is the alternative? How do alternative approaches perform
  - evidence from Peters (2006)
- Everyone likes to complain about demand estimation
  - little evidence to support this claim
  - reminds me a bit of the joke about the drunk looking for the keys under the light ...
  - merger retrospective are a very bad/inefficient way to test demand models
  - some recent field experiments.
- In most cases we need to continue to rely on simulation (in the wider sense) so we need to improve our models

Future direction for research

- Demand estimation:
  - dynamics
  - better more flexible models
  - IVs: weak and invalid
- Supply model:
  - non-price effects
  - dynamics
  - coordinated effects
- Policy issues:
  - uncertainty
  - which mergers are proposed and the effect of policy