The Use of Economics in Merger Analysis

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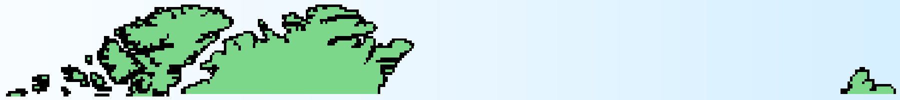
Outline

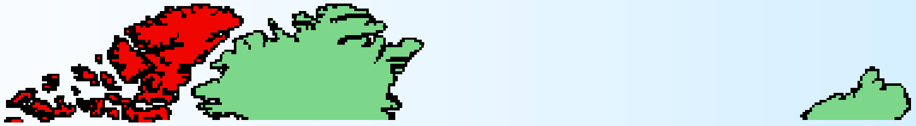
EC

- Mario Monti’s legacy
  - Merger Guidelines; SIEC ċ Č SLC
  - Best Practices
  - Chief Economist
- Irony
  - EC law and policy moving away from “form” towards “effects” based analysis,
  - Just as newly developed countries “import” old EC form-based laws

Global Proliferation of Competition Laws



1900



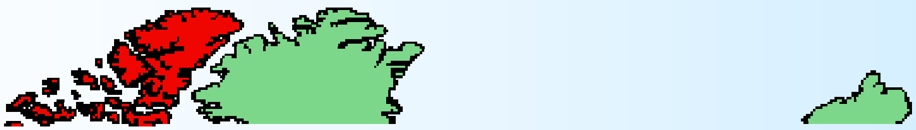
Laws enacted in 1900 or before

1960

Laws enacted in 1960 or before

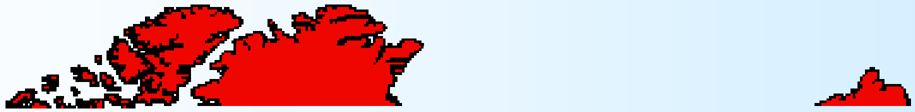
Note: EU introduced antitrust law in 1957

1980



Laws enacted in 1980 or before

2004

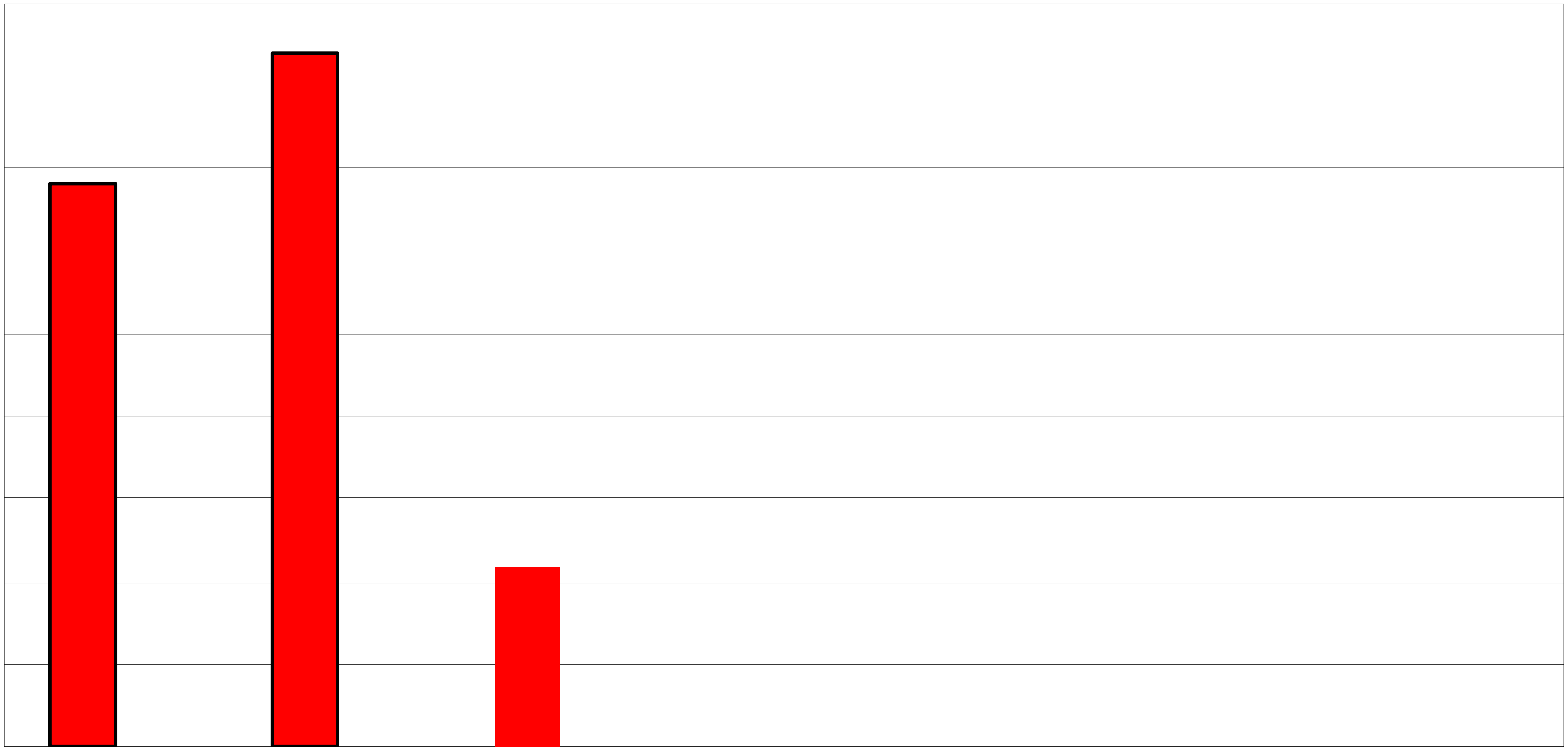


Laws enacted in 2004 or before

Recent U.S. FTC Enforcement

- “Coordinated Effects” merger challenge
- Consummated merger challenge
  - Differences-in-differences estimation of effect

FTC Enforcement Data,96-03:
Č Structure just a starting point



Critique of 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
- Č Market shares and concentration may be poor predictors of merger effects

Beyond Market Structure

- Customer complaints Č challenges (50/51 cases)
  - Arch Coal, Oracle-Peoplesoft
  - What is acceptable scope of customer testimony?
  - Should we systematically survey customers?
- Easy Entry Č closures (19/19 cases)
- “Hot documents” Č challenges (18/20 cases)
- What about Efficiencies?

What is Effect of Merger?

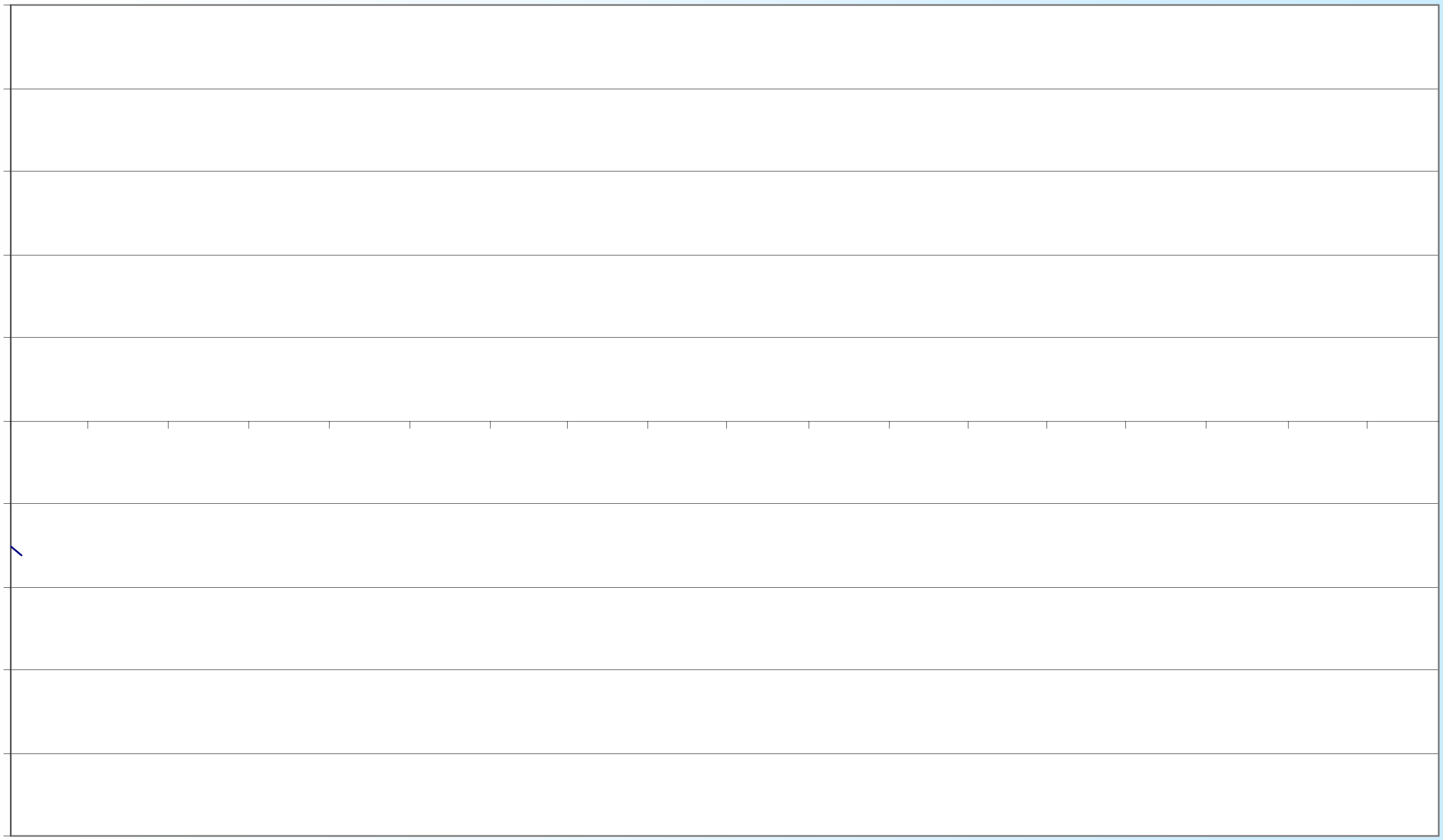
- “Effect” question compares two states of the world (“with” vs. “without” merger)
  - but only one is observed
- Two ways of drawing inference about unobserved state of world
  - Natural experiments
  - Theory-based inference

Natural Experiments

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

Estimating Effect of Marathon-Ashland Merger

- 1998, recent wave of petroleum mergers
- Change in HHI of about 800, to 2260
- Isolated region
  - Reformulated Gas mandated by EPA
  - Difficulty of arbitrage makes price effect possible
- Prices did ***NOT*** increase relative to other regions using similar type of gasoline
  - "Differences-in-Differences" Estimation controls for unobserved demand and supply shocks that could have accounted for the change.



Example: 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 economic theory predict effects of mergers in bargaining markets?

John Nash’s “Split the Difference” Bargaining Solution

- Same indeterminancy confounded John Nash
- Proved any “reasonable” solution would “split the difference”
- Č*The gains from agreement relative to the alternatives to agreement, determine the terms of any agreement*
- 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 Solution 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 bargain jointly, consequence of "no agreement" for insurance co. is worse
  – Prediction Č merged entity gets better price

Model guides investigation

- *Relevant evidence*: how good are the alternatives to the merging products?
  - How much does merger change the alternatives of insurance company?
- *Efficiencies*: 50% pass-through of fixed-cost savings

Bargaining Natural Experiment

- Threat of exclusion induces competition between providers to be included in "network."
- *Prediction*: Eliminating threat increases price
- *Natural Experiment:* "Any-willing-provider" (AWP) laws force inclusion of any provider willing to accept plan's terms and conditions.
- *Evidence*: States with AWP laws have 2% higher medical expenditures.
  - Michael Vita, ".. selective contracting: … `any-willing-provider' regulations," Journal of Health Economics 20 (2001) 955–966

Auction Merger Simulation

- "Oral" or "English" auction, price is set by the second-highest bidder.
  - Mergers among top two bidders affect price.
  - *Example*: If values={1,2,3,4}, then merger of {3,4} reduces winning bid from 3 to 2.
- Expected merger effect =
  - Expected merger effect = [illegible]

Auction Merger Simulation (cont.)

- *Power-related distributions* give rise to Herfindahl-like formulas to predict merger effects.
  - Price change=h(s1+s2)-h(s1)-h(s2)
  - Logit model: $h(s)=-\sigma\,(\sqrt{6}/\pi)*\log(1-s)$
- Govt. witness in Oracle-Peoplesoft used auction model to predict merger effect
  - 5-11% price increase in "high-function financial mgt. systems"
  - 13-30% price increase in "high-function HR software"
- *Is model grounded in evidence*: is the magnitude of variance plausible?
  - hard to get significant price increase without enormous variance

IV. Backlash Against Careless Use of Merger Simulation

How well do we understand Post-Merger Product Re-positioning

- Carnival repositioned brands after acquisition of Princess
  - This kind of repositioning NOT contemplated by *Guidelines*
- Standard price-setting merger intuition
  - “Close” merging firms Č big merger effect.
  - Non-merging firms gain more than merging firms.
- Simple models of post-merger repositioning show
  - Merged products move apart to avoid cannibalization
  - Non merging products can be hurt by merger
- What good are pre-merger elasticities?
  - Ignoring repositioning “overstates” post-merger price rise

Criticism of Merger Simulation is Healthy

- Reaction against formal models similar to what happened in Labor and Macroeconomics
  – Normal and healthy
  – Reminds us to “ground” models in facts of a case
- Much of the criticism is criticism of economics in general.
  – How economists think.

Isn't merger simulation built on unrealistic assumptions?

- Behind every competitive effects analysis is an economic model.
  - Simulation makes the model explicit
  - Forces economists to "put cards on table"
- Every model makes unrealistic assumptions
- Crucial question is whether model ignores factors that lead to biased predictions

Has merger simulation been tested against real data?

- No methodology has been shown to predict effects of real mergers
  - No coordinated effects theory,
  - No unilateral effects theory,
  - No market concentration theory.
- Model should be judged by how useful it is
  - Does it focus investigation?
  - Does it capture current competition?

Is merger simulation worth the money?

- *Demand estimation* is often expensive, open ended, yet can yield very little.
  - Often done without simulation, e.g., Kraft
- Merger simulation does NOT require demand estimation.
  - Can be done quickly, with very little information
- Virtue of simulation is focusing investigation on facts and assumptions that matter

Does merger simulation sway decision-makers at agencies?

- Merger simulation is standard methodological tool
  - No tool is definitive.
  - Used to organize evidence, not to substitute for it.
- First used in 1994 in US v. IBC
  - Expert declaration published in *Int'l J. Economics of Bus.* with five other examples from real cases.
- Use in recent litigated cases
  - Lagardere; Oracle/Peoplesoft;

Doesn't simulation always predict a price increase?

- Every anticompetitive theory predicts price increase
  - We have safe harbours for concentration
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V. More Economics is Better

Will Vertical Theory “infect” Horizontal Merger Analysis

- Anticompetitive Vertical Theories
  - Softening horizontal competition.
  - Multilateral opportunism.
  - Dynamic entry/exit/investment effects.
- Thought Experiment: what if we used vertical theory to evaluate horizontal mergers?
  - e.g., “Multilateral Competition” implies upstream monopolists have no market power UNLESS they vertically integrate
  - Č Upstream mergers have no price effects.
- Can two different theories explain same industry?
  - Empirical evidence needed

Competition Advocacy Informed by Empirical Work

- Eliminate Government-imposed barriers to competition
  - Small risk of type I enforcement error
- FTC targets
  - Entry restrictions, e.g., attorneys, contact lens
  - Information restrictions & mandates, e.g., PBM's
  - Bad regulations, e.g., vertical divorcement