

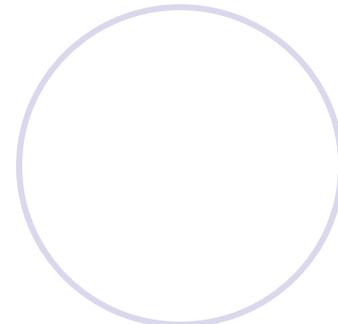
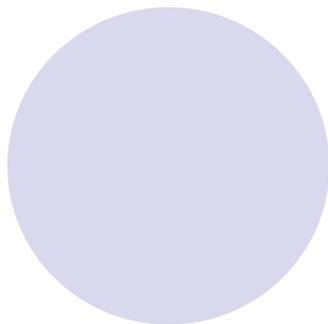
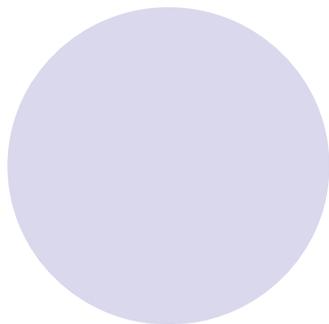
Merger Simulation at the FTC

The slide features a decorative arrangement of six circles. Three circles are solid light purple, and three are hollow with a light purple outline. They are arranged in two rows of three. The top row circles are positioned behind the title text. The bottom row circles are positioned behind the speaker's name and title text.

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Views expressed today are the
speaker's, not those of the FTC
or any FTC Commissioner



Quantitative Prospective Merger Analysis

- Merger “Simulation” using has been a part of merger analysis for the last decade
- Werden & Froeb proposed merger simulation as an “Alternative to Structural Merger Policy”
- The typical simulation exercise posits a particular functional form for demand (e.g., logit, AIDS) and assumes simple “Bertrand” price competition



Quantitative Prospective Merger Analysis, (cont'd)

- Time is now ripe (past due?) to assess how well these simulation exercises predict actual price increases
- Economists at FTC and DOJ are working on this issue
- Peters (2006) simulates effects of 5 consummated airline mergers:
(Northwest/Republic; TWA/Ozark;
Continental/People's Express; Delta/Western;
USAir/Piedmont)

Quantitative Prospective Merger Analysis, (cont'd)

- Peters estimates 2 models:
 - Simple nested logit
 - “Generalized Extreme Value” (GEV)
 - Assumes static Bertrand conduct
- Compares “predicted” price changes from these models to “actual” (where “actual” is observed $\% \Delta P$ minus average industry-wide $\% \Delta P$)

Quantitative Prospective Merger Analysis, (cont'd)

- Peter's results (Peters, 2006, Table 3)

Merger	Observed	Logit	GEV
NW/Rep	7.2	7	19.8
TWA/Oz	16	7.2	20.8
Cont/PE	29.4	3.4	6.4
Delta/Wes	11.8	3.3	7.6
US/Pied	20.3	4.5	12.7



Quantitative Prospective Merger Analysis, (cont'd)

- Weinberg & Hosken (2008)
 - Follow-up to Ashenfelter & Hosken (2006)
 - A&H used D-I-D analysis to examine consummated mergers in 2 industries
 - Control group is private label (PL)

Quantitative Prospective Merger Analysis, (cont'd)

- Weinberg & Hosken evaluate competitive effect for Pennzoil/QS (motor oil) and Aurora/Log Cabin (maple syrup)
- Use AIDS, linear, and logit demand systems
- **Results:**
 - Some of the simulations (e.g., logit) for oil yield accurate prediction of post-merger price; but more generally:
 - Actual $\% \Delta P$ large for oil, small for syrup
 - Simulated $\% \Delta P$ small for oil, large for syrup

Quantitative Prospective Merger Analysis, (cont'd)

- Why didn't simulation models yield better predictions?
- Many possible explanations
- For airlines, Peters attempts to decompose difference between observed and predicted prices into 4 categories:
 - Loss of competition
 - Observed changes in entry, exit, flight frequency, airport presence
 - Unobserved changes in demand (e.g., due to change in service quality)
 - Changes in marginal cost

Quantitative Prospective Merger Analysis, (cont'd)

	Loss of competition	Observed demand changes	Unobserved demand-side changes	Unobserved Supply-side changes	Total price Effect
NW/Republic	19.8	-1.4	.9	-10.1	7.2
TWA/Ozark	20.8	-2.2	-.8	-1.0	16.0
Cont/PE	6.4	.7	.2	20.5	29.4
Delta/Western	7.6	-1.5	-.5	6.0	11.8
USAir/Piedmont	12.7	2.0	-1.9	6.7	20.3

Quantitative Prospective Merger Analysis, (cont'd)

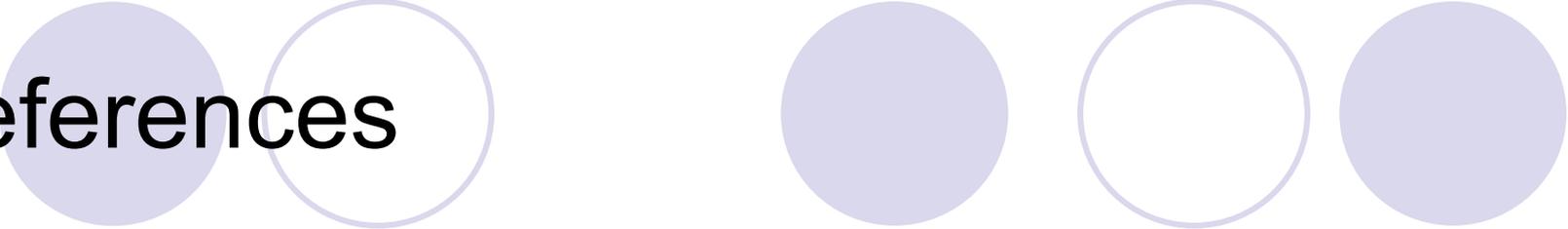
- Peters concludes inaccurate prediction may reflect fact that premerger firm conduct not Bertrand – firms may have been coordinating tacitly.
- Weinberg & Hosken suggest cost and demand changes *do not* account for prediction error.

Quantitative Prospective Merger Analysis, (cont'd)

- Bottom line:

- Simulation is helpful, but cannot at this stage be relied upon to tell “the whole story”
- Economists must continue to refine technique, taking into account a broader variety of:
 - Pre-merger conditions (e.g., possibility that competition not Bertrand)
 - Post-merger conditions, such as repositioning by *both* merging parties and their rivals
 - New research by **Gandhi**, Froeb, Tschantz, & Werden (J. Ind. Econ. 2007) suggest that repositioning by *merged products* attenuates merger price effects.

References



- Ashenfelter & Hosken, “The Effect of Mergers on Consumer Prices: Evidence from Five Selected Case Studies,” December 2006.
- Ghandi, Froeb, Tschantz, & Werden, “Post-Merger Product Repositioning,” *Journal of Industrial Economics*, 2007, (forthcoming).
- Peters, “Evaluating the Performance of Merger Simulation: Evidence From the U.S. Airline Industry,” *J. Law & Economics*, 2006.
- Salinger et al. “Economics at the FTC: Data Intensive Mergers and Policy R&D,” *Review of Industrial Organization*, 2006.
- Simpson & Taylor, “Do Gasoline Mergers Affect Consumers’ Prices? The Marathon Ashland and UDS Transaction,” *J. Law & Economics*, 2007, (forthcoming).
- Taylor & Hosken, “The Economic Effects of the Marathon - Ashland Joint Venture: The Importance of Industry Supply Shocks and Vertical Market Structure,” *Journal of Industrial Economics*, 2007, (forthcoming).
- Weinberg & Hosken, “An Evaluation of Merger Simulations,” December 2006, <http://mweinber.myweb.uga.edu/simevaluation.pdf>