Assessing Horizontal Mergers

Class 4

1

Steps to Assess a Merger

1) Evidence gathering ✓
2) Market delineation ✓
3) Significantly increase concentration?
4) Potential adverse competitive effects: theories of harm
5) Entry
6) Efficiencies

2

Concentration (see Workshop 1)

- Identify market participants:
  - Current producers or sellers
  - "Rapid entrants": firms that in response to a SSNIP likely would start selling quickly
    - No significant sunk costs
- Find market shares that best reflect a "firms' future competitive significance"
  - Merger assessment is forward looking
    - When is capacity better than current sales?

3

U.S. Safe Harbors (p. 19, HMG)

- HHI < 1500:
  - "unconcentrated"
    - "unlikely to have adverse competitive effects "
- 1500 ≤ HHI ≤ 2500:
  - "moderately concentrated"
    - ΔHHI < 100 "unlikely to have adverse competitive effects"
    - ΔHHI > 100 "potentially raise significant competitive concerns"
- HHI > 2500:
  - "highly concentrated"
    - ΔHHI < 100 "unlikely to have adverse competitive effects"
    - 100 ≤ ΔHHI ≤ 200 "potentially raise significant competitive concerns"
    - ΔHHI > 200 "presumed to be likely to enhance market power"

Note: HHI is post-merger HHI

4

Canada Safe Harbors (p. 19 MEG)

- Unlikely to challenge a merger based on a:
  - unilateral effects theory of harm when "the post-merger market share of the merged firm would be less than 35 percent"
  - coordinated effects theory of harm when "the post-merger market share [of] the four largest firms in the market (CR4) would be less than 65 percent or the post-merger market share of the merged firm would be less than 10 percent"

"Merger Enforcement Guidelines" (2011)
http://www.competitionbureau.gc.ca/eic/site/cb-bc.nsf/vwapj/cb-meg-2011-e.pdf/$FILE/cb-meg-2011-e.pdf

5

FTC, Complaint (2003)

- "In the superpremium ice cream market, Nestlé has approximately a 36.5% share (in dollars) across all channels. Dreyer's has approximately a 19.1% share (in dollars) across all channels.
- After the acquisition, Respondents will have a market share of approximately 55.6% (in dollars) of the superpremium ice cream market.
- The acquisition raises the HHI from 3,501 to 4,897, an increase of 1,396 points."

http://www.ftc.gov/enforcement/cases-proceedings/0210174/nestle-holdings-inc-dreyers-grand-ice-cream-holdings-inc

6

Nestle–Dreyer's (FTC 2003)

Nestle Holdings, Inc., proposed to merge with Dreyer's Grand Ice Cream, Inc. The firms were rivals in the sale of "superpremium ice cream." Compared to premium and non-premium ice cream, superpremium ice cream contains more butterfat, less air, and more costly ingredients, and sells at a substantially higher price. Nestle sold the Haagen-Dazs brand in competition with the Dreyer's Dreamery, Godiva, and Starbucks brands. Together Nestle and Dreyer's accounted for about 55% of superpremium ice cream sales, and Unilever, through its Ben & Jerry's brand, accounted for nearly all of the rest.

$$HHI = 36.5^2 + 19.1^2 + 42^2 = 3{,}461$$

p. 28 of 2006 Commentary on HMG

7

Categories of Harm from Merger

- Coordinated effects: Merger increases likelihood or value to firms of coordinating their actions (pricing, quantity, etc.)
  - Includes two different types of coordination:
    - Express collusion (criminal)
    - Tacit collusion, collective dominance (non-criminal)
- Unilateral effects: Merger increases firms' ability to exercise market power

8

Coordinated v. Unilateral Effects

- Coordinated effects requires that:
  - Firms act with the intention of influencing *future* actions of competitors
    - Behavior only makes profit-sense if influence rivals
- Unilateral effects requires that:
  - Firms take competitors' best response functions as given and not subject to change
    - Behavior makes immediate profit-sense
- Complete investigation considers both

9

Two Fundamental Unilateral Effects Theories of Harm (Outlines)

- Homogenous goods, e.g. using Cournot:
  - Market already highly concentrated, merger likely to substantially increase exercise of market power
  - Merging firms have a cost advantages over competitors: big price increase post-merger
- Differentiated goods, e.g. using Bertrand:
  - Market concentration not very informative
  - Close substitutes?
    - Do consumers regard merging firms' products as 1st and 2nd choices?
    - Diversion ratios/cross-price elastiticies
  - Margins

10

Nestle–Dreyer's (FTC 2003)

Commission staff developed evidence showing that the merger was likely to result in unilateral anticompetitive effects, reflecting the close rivalry between the merging firms. Dreyer's recently had expanded on a large scale into superpremium ice cream production and increased its share in this relatively mature market to above 20%. Analysis suggested that, by expanding, Dreyer's induced increased competition from incumbent superpremium firms.

p. 28 – 29 of 2006 Commentary on HMG

11

Nestle–Dreyer's (FTC 2003)

Econometric analysis showed that the diversion ratios between the Nestle and Dreyer's superpremium brands were sufficient to make a significant unilateral price increase by the merged firm likely. The diversion ratios with Unilever's superpremium brands also were high. The analysis implied that the merged firm would be likely to raise its prices anticompetitively and that Unilever would also likely raise its Ben & Jerry's prices in the post-merger environment. The Commission entered into a consent agreement with the merging firms requiring divestiture of two brands and key distribution assets.

p. 29 of 2006 Commentary on HMG

12

Diversion Ratios

- Diversion Ratio: Fraction of lost sales caused by a price increase going to each rival
  - Ex: Consider a 10% price increase for Brand A that reduces sales of Brand A by 100 units and causes 20 buyers to switch to Brand B
    - The diversion ration from Brand A to Brand B is 0.20 (20%): one-fifth of the sales lost by Brand A are claimed by Brand B
    - What does a high diversion ratio mean about closeness of substitutes?

13

Shapiro (1996) "Mergers with Differentiated Products"

"In some cases, the Diversion Ratio (D) from Brand A to Brand B will be closely linked to Brand B's market share. In particular, if all sales lost by Brand A are captured by other brands in the market, and if all brands are "equally close" to each other, then the D from Brand A to Brand B may be stated as $s_B/(1-s_A)$, where s_A and s_B are the brands' market shares." p. 25

14

Shapiro (1996) "Mergers with Differentiated Products"

"In the more realistic situation where some customers substituting away from Brand A switch to products outside the market entirely, this D will be proportionately lower. For example, if 20 percent of the customers lost by Brand A leave the market entirely, the D from Brand A to Brand B will instead be $(0.8)\, s_B/(1-s_A)$." p. 25

15

q1 = 100 - 5*p1 + 1*p2 + 1*p3
q2 = 100 + 1*p1 - 5*p2 + 1*p3
q3 = 100 + 1*p1 + 1*p2 - 5*p3
Cost efficiencies: e1 = 1 (post-merger: c1*e1)
Cost efficiencies: e2 = 1 (post-merger: c2*e2)

a1:	100	Pre-merger Bertrand Equilibrium							
a2:	100	Good	*p*	*q*	*c*	*s(pq)*	*profits*	Tot. π:	960.0
a3:	100	1	20.00	40.0	12.0	0.33	320.0	CS:	
b:	5	2	20.00	40.0	12.0	0.33	320.0	TS:	
d:	1	3	20.00	40.0	12.0	0.33	320.0	HHI:	3333
e:	1								
f:	5	Post-merger Bertrand Equilibrium							
g:	1	Good	*p*	*q*	*c*	*s(pq)*	*profits*	Tot. π:	988.3
h:	5	1	21.03	36.1	12.0	0.32	325.8	CS:	
p1:	20.00	2	21.03	36.1	12.0	0.32	325.8	TS:	
p2:	20.00	3	20.21	41.0	12.0	0.35	336.6	HHI:	5431
p3:	20.00								
e1:	1.00								
e2:	1.00								

Are goods equally close substitutes?

16

q1 = 100 - 5*p1 + 1*p2 + 1*p3
q2 = 100 + 1*p1 - 5*p2 + 1*p3
q3 = 100 + 1*p1 + 1*p2 - 5*p3
Cost efficiencies: e1 = 1 (post-merger: c1*e1)
Cost efficiencies: e2 = 1 (post-merger: c2*e2)

a1:	100	Pre-merger Bertrand Equilibrium							
a2:	100	Good	*p*	*q*	*c*	*s(pq)*	*profits*	Tot. π:	885.6
a3:	100	1	22.00	30.0	16.0	0.28	180.0	CS:	
b:	5	2	20.00	42.0	11.6	0.36	352.8	TS:	
d:	1	3	20.00	42.0	11.6	0.36	352.8	HHI:	3373
e:	1								
f:	5	Post-merger Bertrand Equilibrium							
g:	1	Good	*p*	*q*	*c*	*s(pq)*	*profits*	Tot. π:	910.9
h:	5	1	23.02	25.9	16.0	0.26	181.8	CS:	
p1:	22.00	2	20.82	39.1	11.6	0.36	360.6	TS:	
p2:	20.00	3	20.18	42.9	11.6	0.38	368.5	HHI:	5285
p3:	20.00								
e1:	1.00								
e2:	1.00								

What is diversion ratio from Good 1 to Good 2?

Does the market share equation from Shapiro (1996) work?

17

Shapiro (1996) "Mergers with Differentiated Products"

"A simple formula [gives] the post-merger price increase if [you] assume that consumer demand functions exhibit constant elasticity over the relevant range of prices. Very often when economists estimate demand using data, they employ such constant-elasticity demand functions. Assuming that the two merging brands are symmetric prior to the merger, the merged entity's profit maximizing percentage price increase is $mD/(1-m-D)$. Here m is the premerger Gross Margin and D is the Diversion Ratio between the two merging brands." p. 26

18

Shapiro (1996) "Mergers with Differentiated Products"

"For example, suppose that the premerger price is $100, and the cost per unit is $60, so the premerger markup, m, is 40 percent, not uncommon at all for differentiated products. If we assume a Diversion Ratio of 0.2 (i.e., 20 percent of the sales lost when the price of Brand A goes up are captured by Brand B), then the optimal post-merger price increase in percentage terms is $(0.4) * (0.2)/(1 - 0.4 - 0.2) = 0.2$: a 20 percent price increase would maximize profits." p. 26

Shapiro (1996) "Mergers with Differentiated Products"

"If demand instead takes a linear form, the elasticity rises as the price rises, making the optimal post-merger price increase smaller. The optimal post-merger percentage price increase with linear demand (again with premerger symmetry between the two brands) is given by $mD/2(1 - D)$. This formula is quite different from the earlier one. Using the same numerical example as above, with a premerger Gross Margin of 40 percent and a Diversion Ratio of 20 percent, the post-merger price increase would be "only" 5 percent." p. 27

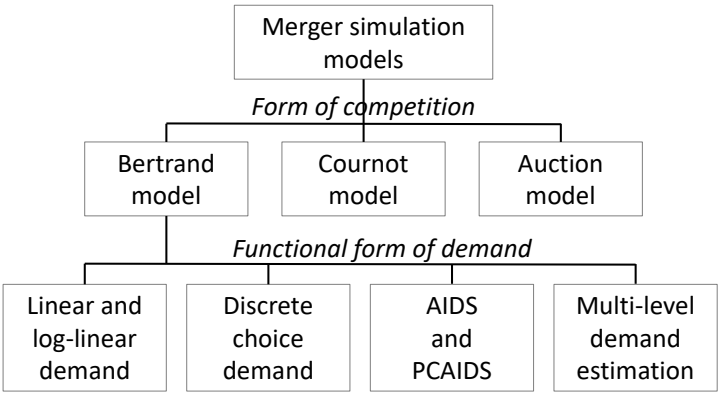
q1 = 120 - 5*p1 + 1*p2 + 0*p3
q2 = 120 + 1*p1 - 5*p2 + 0*p3
q3 = 120 + 0*p1 + 0*p2 - 5*p3
Cost efficiencies: e1 = 1 (post-merger: c1*e1)
Cost efficiencies: e2 = 1 (post-merger: c2*e2)

a1:	120	Pre-merger Bertrand Equilibrium							
a2:	120	Good	*p*	*q*	*c*	*s(pq)*	*profits*	Tot. π:	720.0
a3:	120	1	20.00	40.0	12.0	0.40	320.0	CS:	
b:	5	2	20.00	40.0	12.0	0.40	320.0	TS:	
d:	1	3	20.00	20.0	16.0	0.20	80.0	HHI:	3600
e:	0								
f:	5	Post-merger Bertrand Equilibrium							
g:	0	Good	*p*	*q*	*c*	*s(pq)*	*profits*	Tot. π:	728.0
h:	5	1	21.00	36.0	12.0	0.40	324.0	CS:	
p1:	20.00	2	21.00	36.0	12.0	0.40	324.0	TS:	
p2:	20.00	3	20.00	20.0	16.0	0.21	80.0	HHI:	6691
p3:	20.00								
e1:	1.00								
e2:	1.00								

What is the pre-merger gross margin (Lerner Index) on Good 1?

Does simple formula from Shapiro (1996) work?

Budzinski and Ruhmer (2009): Figure 1 in "Merger Simulation in Competition Policy: A Survey" p. 283



22

Werden (1996): "A Robust Test for Consumer Welfare Enhancing Mergers Among Sellers of Differentiated Products"

Abstract: Recently developed tools are used to predict the effects of differentiated products mergers, but they require the assumption of a particular functional form for industry demand, and any assumption is vulnerable to attack. This paper demonstrates that marginal cost reductions necessary to restore premerger prices can be calculated without making any assumption about demand, and it provides a robust and practical method for determining whether a particular merger enhances consumer welfare.

23

Entry: Counteract Competitive Effects?

- Entry can mitigate effects if it is:
  - Timely: Can be planned, implemented, and impact market price before customers suffer significant harm
  - Likely: Entry would be profitable
  - Sufficient: Entrant will offer enough competition to offset harm
  - Actual history of entry: important evidence that the three conditions are likely to be met

24

Exxon–Mobil (FTC 1999)

Prior to merging, Exxon Corp. and Mobil Corp. were leading producers of jet turbine oil. Jet turbine engines require a specialized lubricant that can operate in an extreme environment. Failure by the lubricant could lead to engine failure, requiring the engine to be taken out of service for an extended period of time for repairs or overhaul. This lubricant, although expensive for a lubricating oil, was inexpensive relative to the cost of losing use of an engine for any period of time as well as to the cost of repairing or replacing an engine. To secure sales to customers, jet turbine oil producers submitted their products for extensive product testing, including testing on the customer's specific model engine.

p. 40 of 2006 Commentary on HMG

Exxon–Mobil (FTC 1999)

After developing a satisfactory lubricant, therefore, a new entrant would have to invest substantial sunk costs in product testing and incur substantial time delay in entering. The Commission, therefore, concluded that entry would not eliminate competitive concerns. The Commission and the parties entered into a settlement that required, among other things, divestiture of Exxon's jet turbine oil business.

p. 40 of 2006 Commentary on HMG

Efficiency Defense

- There are multiple ways a merger may be socially beneficial. For example, by:
  - Allowing firms to combine complementary assets and produce better products and/or produce at lower costs
  - Eliminating costly duplication
  - Enabling cost savings from scale economies

Efficiency Defense of a Merger

- To be a viable defense, efficiency claims must:
  - Cognizable efficiencies:
    - Be merger-specific: unlikely achieved without the proposed merger or other means with similar anticompetitive effects
    - Be verifiable: vague or speculative claims excluded
    - Be net of costs of achieving efficiencies
    - Not be the result of anticompetitive reductions in output, quality, services, etc.
  - Be sufficiently large to offset potential harm

28

Cognizable Efficiencies

Efficiencies resulting from shifting production among facilities formerly owned separately, which enable the merging firms to reduce the incremental cost of production, are more likely to be susceptible to verification and are less likely to result from anticompetitive reductions in output. Other efficiencies, such as those relating to research and development, are potentially substantial but are generally less susceptible to verification and may be the result of anticompetitive output reductions. Yet others, such as those relating to procurement, management, or capital cost, are less likely to be merger-specific or substantial, or may not be cognizable for other reasons. (p. 31, 2010 HMG)

29

Oracle–PeopleSoft (DOJ 2004)

Oracle Corp. made an unsolicited tender offer for PeopleSoft, Inc. Oracle and PeopleSoft competed in the sale of Enterprise Resource Planning software, which provides tools for automating essential operating functions within large organizations. Oracle Corp. claimed that the proposed takeover would produce cost reductions of more than $1 billion per year. Although these claims were based on projections made by a high ranking executive, the Department's attempts to verify these claims revealed that they were predicated on little more than unsupported speculation with no allowance having been made for the costs of integrating the two companies.

p. 51 – 52 of 2006 Commentary on HMG

30

Oracle–PeopleSoft (DOJ 2004)

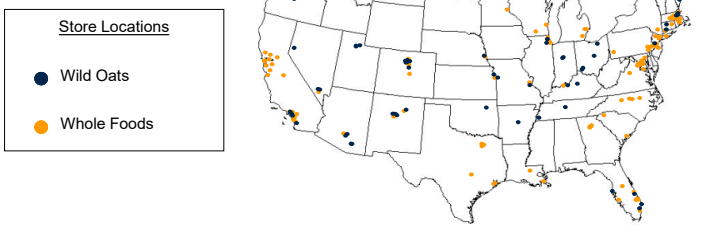
Moreover, the Department concluded that at least a significant portion of the projected cost savings were a consequence of projected reductions in sales that would be the result of eliminating the R&D and sales staffs of PeopleSoft. The Department found that, for the most part, the cost reductions would stem from anticompetitive reductions in innovation, service, and output, and therefore did not reflect cognizable efficiencies. The Department filed suit to block the transaction, but the district court declined, on other grounds, to enjoin it.

p. 51 – 52 of 2006 Commentary on HMG

31

Whole Foods (WF)—Wild Oats (OATS)

- WF and OATS: national supermarket chains selling organic and natural foods
  - OATS in financial difficulty and WF seeks to acquire it



32

Timeline

- Fall 2006: WF announces OATS acq. ($700M)
- Summer 2007: FTC challenged merger alleging harm in 21 geographic areas
  - Federal court denied preliminary injunction
  - FTC appeals and Whole Foods closes acquisition
- Summer 2008: Reversal and sent back to court
- Spring 2009: Whole Foods and FTC settle
  - Divestiture of a number of overlap stores

33

Handouts & Discussion Questions

- Considering Prof. Murphy's expert report:
  - What antitrust market does he assert?
  - Which theories of harm does he present?
  - What kind of evidence does he use?
  - What about entry?
  - What about efficiencies?
  - Which parts of his expert report do you suspect were most attacked?

http://www.ftc.gov/sites/default/files/documents/cases/2007/08/070823murphy.pdf

34

Looking Ahead

- Presentation preferences survey opens today: see portal announcements for the link
  - Replies due by 4pm tomorrow (Fri, Sept. 29)
    - There is *no* advantage to being first; Instead, consider your preferences on **topics**, dates & team members
    - **Check readings and reading guide for each date**
      - Big differences across weeks in the amount of econometrics, reading, theory, and original research required
    - See Section 2.2.1 in syllabus
- Workshop 3: Tues, 11:10 – 1 in Robarts, 4033

35