

Merger Analysis and Anti-Trust

Merger: The process in which two or more independently owned firms join under the same ownership. This process could be a merger, takeover, integration, or acquisition. It may affect internal governance of the firm, but from the point of view of the market, they are very similar.

Horizontal Mergers and Vertical Mergers

Definitions:

Horizontal mergers: two competing firms merge with each other.

Vertical mergers: a supplier and a retailer (or more generally, 'upstream' and 'downstream' firms) merge with each other

There is a third sort: conglomerates. These are mergers between unrelated firms. Puzzling but surprisingly common behavior. we won't spend much time on this.

Merger Examples

Let's focus first on horizontal mergers:

Examples include:

1. ATT & T-mobile
2. Chrysler, Fiat
3. Ford and Volvo
4. Disney and Miramax
5. Comcast and Time Warner

Examples of mergers between vertically-separated firms include:

1. Vivendi and Universal (ie., Seagram)
2. AOL-Time Warner. This was the largest merger ever at the time, in 2001.
3. Disney and ABC (content and delivery)

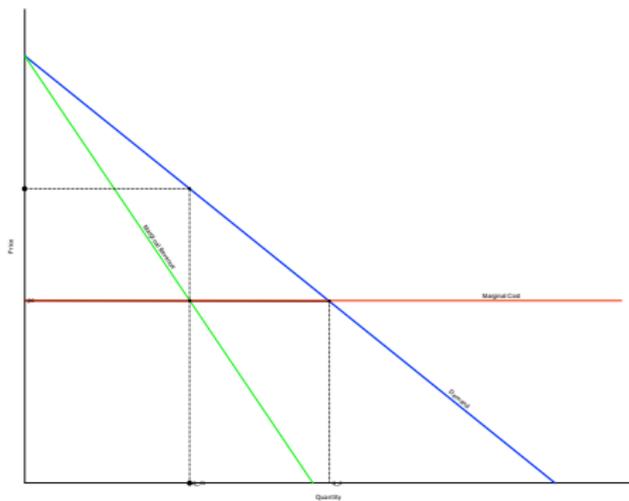
Williamson (1968) Tradeoff

Tradeoff

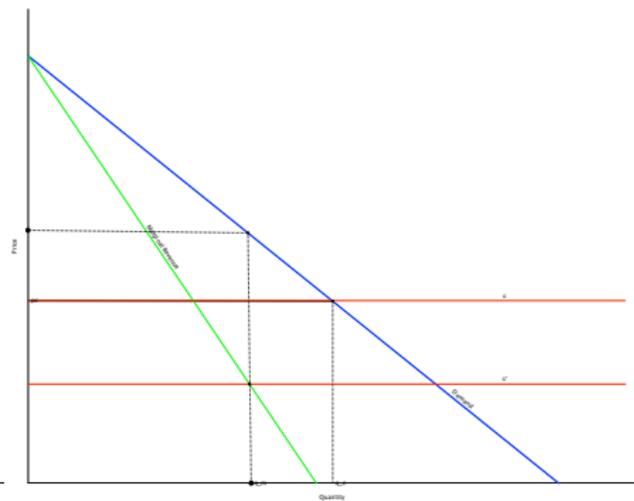
- ▶ Mergers have market power effects: decrease consumer surplus.
- ▶ Mergers might have efficiency effects: lower the cost of production (think of the American Tobacco case).

How should we think about these tradeoffs?

- ▶ Industry that starts with two Bertrand Competitors. Total cost function is $TC(q_i) = cq_i$.
- ▶ Merged firm is a monopolist, with total cost function $TC(q_i) = c'q_i$. Say that there are cost efficiencies, so $c' < c$.

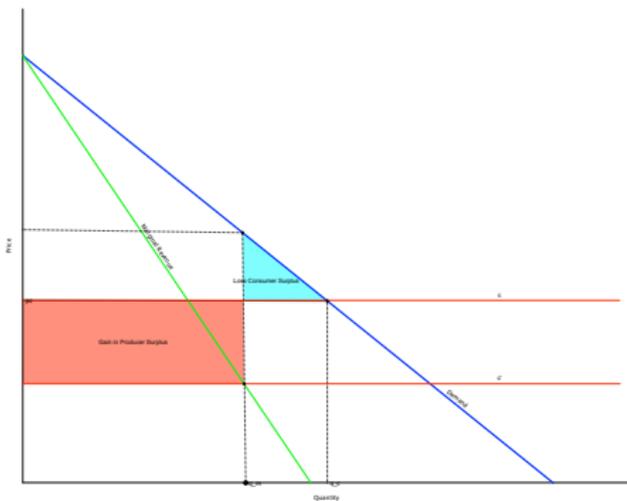


(a) Basic Monopoly Case

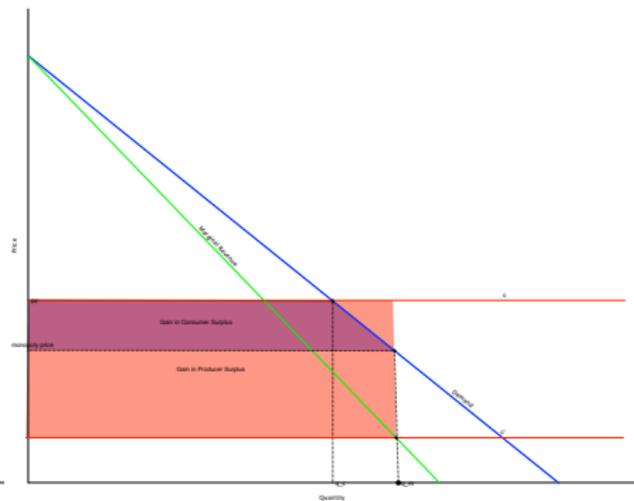


(b) Monopoly Lowers Marginal Cost

When is $\Delta PS > \Delta CS$?



(c) Monopoly Lowers Marginal Cost:
Welfare Tradeoff



(d) Monopoly Lowers Marginal Cost Even
More!

History of Antitrust Laws

Two economic pressures emerged after the U.S. Civil War: Farmers upset over depressed prices and high rail rates A public discomfort with quickly growing size of business, sharpened by several scandals Led to the passage of key legislation and creation of regulatory agencies:

- ▶ Sherman Act (1890)
- ▶ Interstate Commerce Commission (1887)
- ▶ Clayton Act (1914)
- ▶ FTC Act (1914)

Key agencies today are the DOJ and the FTC. U.S. Attorney General enforced Sherman Act from 1890 - 1903 Assistant to AG enforced from 1903 - 1933 Antitrust Division of DOJ created in 1933. FTC enforces Clayton Act and FTC Act Some differentiation by industry between DOJ and FTC.

Scope of Antitrust Laws: Sherman Act

Language of antitrust laws is quite vague
Sherman Act (1890):

Section 1: Every contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce among the several states, or with foreign nations, is hereby declared illegal.

Section 2: Every person who shall monopolize, or attempt to monopolize, or combine or conspire with any other person or persons, to monopolize any part of the trade or commerce among the several states, or with foreign nations, shall be deemed guilty of a felony.

Scope of Antitrust Laws: Clayton Act

Clayton Act (1914):

Section 2: Prohibits some forms of price discrimination.

Section 3: Prohibits sales based on the condition that the buyer not buy from a competitor where the effect may be “to substantially lessen competition or tend to create a monopoly in any line of commerce.”

Section 7: Prohibits mergers where the effect of such acquisition may be substantially to lessen competition, or to tend to create a monopoly in any line of commerce.

FTC Act (1914):

Section 5: Unfair methods of competition in or affecting commerce, and unfair or deceptive acts or practices in or affecting commerce, are declared unlawful.

Why a DOJ and/or FTC?

To protect consumers/society because they do not have the “socially right” incentives to prosecute.

Implicitly, we cannot rely on:

- ▶ Firms in the market: If a merger raises price for all incumbents, no firm will prosecute.
- ▶ Consumers as a group: there are large organizational costs, but harm is diffused across a large group. Possibly offset by class-action suits, because attorneys are reimbursed a fraction of damages.

Goals of Antitrust Institutions somewhat unclear

- ▶ Is goal consumer welfare or “economic efficiency”?
- ▶ Can be problematic; Consider merger that decreases marginal costs but gives firms incentive to raise prices.
- ▶ What if some consumers gain and others lose? (Would require finer definition of welfare than FTC or DOJ have)
Ex: Cartel agreement that generates more high quality products, but increases price of low quality products. This is a possible outcome if the cartel can fix price but cannot exclude entrants or new investment.
Answer: Collusion is “per se” illegal according to Section I of Sherman Act. So evidence of an agreement in “restraint of trade” means guilty regardless of consequence to consumers.
Tacit agreements are difficult to prosecute.
Europeans don’t have “per se” rule, and must wrestle with the welfare question.

Merger Cases vs. Other Antitrust Cases

Mergers are simplest antitrust situation to analyze because we can compare pre and post outcomes. In a recent 10-year period, the DOJ initiated 1697 investigations of mergers under section 7 of the Clayton act (for M&A that substantially lessen competition), but only 75 investigations of mergers under section 2 of the Sherman Act (for concerted activities or cartel-like agreements)

Difficult to decide whether a “monopoly-like” situation is “socially desirable” hence many cases regarding “monopolization” have been merger cases.

Caveat: price-fixing cases can be easier to win, because of the “per se” rule.

Hart-Scott-Rodino Premerger Notification Act

The Hart-Scott-Rodino Antitrust Improvements Act of 1976 requires acquiring firms with assets $> X$ millions to report all acquisitions of $> Y$ millions to both the FTC and DOJ.

Values of X and Y are indexed. X was \$136.4 million in 2012, and Y was \$13.6 million. Agencies request documents and evaluate the likely effects of merger on competition. Either agency can grant a preliminary injunction.

Follows significant bargaining between firm and agency. Ex: Firm could sell off a product, or a product in a market.

After an injunction, firms can either fight it in court or cancel merger.

Industry structure

- ▶ Refers to the number of firms in an industry and the size distribution of those firms, among other things.
- ▶ Many policy issues revolve around the concentration and number of firms in a particular industry and how competitive we think the industry is. (i.e., Why do some markets have a small number of firms while other markets have a large number of firms?)
- ▶ We've already seen that the number of firms in an industry can have a big impact on the supply equilibrium in the market, but we have not discussed how the number of firms might arise endogenously in the industry.
- ▶ When we think of mergers or entry, we need to specify what we mean by “few” vs. “lots” of firms, as we are focused on changes in the number of firms in an industry.

Concentration Metrics

To do this, economists use Concentration Measures.

Intuition: consider 2 industries: Industry 1: 2 firms

Firm A has 95% market share Firm B has 5% market share

Industry 2: 2 firms

Firm A has 50% market share Firm B has 50% market share

Although each industry has 2 firms, we would like to give an indication that industry 1 looks more like a monopoly than industry 2.

Thus, we use concentration measures rather than just the number of firms to take this into account.

Concentration Metrics

Notation:

N is number of firms

Q is total industry output

q_i is output of firm i , so $Q = \sum_i q_i$

s_i is % share of firm i (i.e.; $\sum_i s_i = 100$)

Two Measures of Concentration:

- ▶ Four-firm Concentration Ratio: $\sum_{i=1}^4 s_i$ for largest 4 firms.
Examples (1992, 2-digit SIC classifications):
Tobacco: 91.8
Furniture: 29.3
Department stores: 53.8
Legal services: 1.4
- ▶ Problems with this or any other “linear” measure: No difference between (80,2,2,2) and (20,20,20,26) (ie, can’t distinguish concentration between the top 4.)

Herfindahl-Hirshman Index (HHI)

$$HHI = \sum_i s_i^2$$

Solves the linearity problem.

Notice: Monopoly: $HHI = 10,000$

10 identical firms: $HHI = 1,000$

DOJ Merger Guidelines use various cut-offs to determine whether or not to analyze a proposed merger.

Problems with Using Concentration Measures

Generally:

Market Definition: How should we define markets and industries when products are differentiated? Does not get to central issue about how firms behave. For example, consider the case with 2 equal-sized firms, but in one industry, they compete Cournot, and in another, they compete Bertrand. The IHH = 2, 500, but we only worry about the Cournot industry.

Why might two competing firms choose to merge?

1. Reduce competition allowing higher prices and higher profits?
 2. Lower production costs (greater economies of scale), leading to higher profits?
 3. Entrench management, allowing managers to obtain higher personal wealth?
 4. Efficiencies: I'm better at managing your company than you are
- Managerial motives (empire building, etc) are widely studied as well. In this class, we focus on the potential effects of mergers on competition.

Incentive to Merge in the Cournot Model

Assume there are N identical (constant marginal cost) firms initially competing in Cournot competition. We have solved this in earlier lectures:

$$\pi_i = \frac{(A - c)^2}{B(N + 1)^2}$$

Now suppose that $M < N$ of these firms merge into a single firm. We assume this single firm is just like the other firms that were not part of the merger. Now there are $N - M + 1$ firms in the market competing with each other. Profits are now:

$$\begin{aligned}\pi_i &= \frac{(A - c)^2}{B(N - M + 1 + 1)^2} \\ &= \frac{(A - c)^2}{B(N - M + 2)^2}\end{aligned}$$

Merged and Unmerged Firms

For the non-merged firms, profit is now clearly higher. In this model, competing firms like it when competitors merge together.

Was the merger profitable for the firms involved?

For these firms, merger increases profits if and only if:

$$\frac{(A - c)^2}{B(N - M + 2)^2} > M \frac{(A - c)^2}{B(N + 1)^2}$$

Which is true if:

$$(N + 1)^2 > M(N - M + 2)^2$$

Is this a condition that is easily met?

Example: $N = 10$; 7 firms merge together

(Sounds potentially profitable if competition now depends on only 4 firms left in the market...)

$$(10 + 1)^2 >< 7(10 - 7 + 2)^2$$

$$121 < 175$$

The merger is not profitable for the firms involved, even in this case

Despite this simple example, we do observe many mergers in the real world. So perhaps this model is missing some important aspects.

1. cost reductions mentioned earlier may be important
2. mergers may change the nature of competition itself (perhaps we adopt a leader-follower rule after merger)
3. differentiated products (if merging firms are close substitutes)

The point: effects of mergers on firms' profits are not so obvious. The reasons for horizontal mergers can be many and varied, but they are not always a profitable thing for firms to do.