

Market Structure and Strategic Competition

Eugenio J. Miravete

Outline

- Market Concentration.
 - Market Definition.
- Mergers.
 - Increase of market power.
 - Potential efficiency gains.
- Staples - Office Depot (1997).
 - Homogeneous products.
 - Bertrand (price) competition.
- Heinz - Beech-Nut (2001).
 - Horizontally differentiated products.
 - Bertrand (price) competition.

Concentration Ratios

- We need a statistic that summarizes the main features of an industry. Such statistic should:
 - Be a simple measure.
 - Account for the likely event that firms are not symmetric.
- Evidently, computation of any concentration ratio first requires that we clearly define what is the relevant market.

- **Market definition:**
 - It should take into account **substitution** possibilities in both consumption and production.
 - Consumption:
 - **Alternative goods** (horizontally or vertically differentiated).
 - **Geographic boundaries** of the market. How far do consumers go to take advantage of price differences?
 - Production:
 - Entry: **switching activities** in response of price differential: airline routes.
 - **Potential entrants** (unfortunately mostly unobservable).

- The m-firm concentration ratio:

- It is defined as the market share of the "m" largest firms of an industry.
- It is intuitive but it does not capture important features of the size distribution of sellers, namely, asymmetries in the distribution of these sizes. The market shares of the following two industries lead to identical 3-firm concentration ratio:

- X: 30, 10, 5, 1, 1, 1, ... , 1. (HHI = 0.108)

- Y: 15, 15, 15, 10, 10, 10, 10, 10, 5. (HHI = 0.120)

- The Herfindahl-Hirshman Index (HHI):

- It is defined as the sum of the squares of market shares of each firm in the industry.

$$HHI = \sum_{i=1}^n s_i^2$$

- It is sometimes multiplied by 10,000.
- It accounts for the asymmetry of distribution of sizes as it includes the market shares of all firms in the industry.
- The HHI for a monopolist is $HHI = 1$.
- HHI is higher the fewer firms an industry has.
- HHI increases the more asymmetric the distribution of firm sizes is.

- **Concentration Ratios and Antitrust:**
 - Are high concentration ratios bad per se?
 - Schumpeter.
 - Do high concentration ratios lead to high price-markups?
 - We should be careful in using this popular causality argument.
 - Reality is more complex and indeed a high concentration ratio might be the result of some competition regime that allows to survive only those firms that are more efficient.
 - Should we break-up firms of concentrated industries? Not necessarily if we believe in the above *differential efficiency hypothesis* (Demsetz) because it will lead to a less efficient industry configuration.
 - Still, the Department of Justice (DoJ) **routinely compute** an approximate HHI before and after each proposed merger to evaluate whether to start an investigation.
 - This is **known** and it conditions the behavior of firms that wish to merge.

Office Depot - Staples

- **Office superstore chains (OSS):**
 - Office Depot: largest (500 stores in 38 states; \$6.1bn).
 - Staples: second largest (550 stores in 28 states; \$3bn).
 - Office Max (575 stores in 48 states; \$1.5bn in office supplies).
- **Office superstore concept:**
 - Introduced by Staples in 1986.
 - Adopted by Office Depot in 1987-87.
 - The business model takes advantage of the price discounts offered by stationery and other office suppliers to large customers.
 - Office superstores purchase large amounts of many items (5000 to 6000) and sell them in large stores (23,000 to 30,000 sq.feet) mostly located in shopping malls.
 - They sell at a 30% to 70% discount of suggested retail prices.

- **Winners and losers:**
 - Retailing of office supplies was redefined. Small stores had to close.
 - Consumers enjoyed lower price as these firms competed aggressively and continuously reduced operating costs by improving in distribution.
- **Merger:**
 - Announced in September of 1996.
 - It amounted to \$4bn deal.
 - A seven month investigation was launched.
 - Federal Trade Commission (FTC) decided to challenge the merger in court because the merger was expected to increase prices substantially (more than 5%) and permanently.

- **Market:**
 - FTC argued that it was "the sale of consumable office supplies through office superstores."
 - OSS offer a distinct set of products and services.
 - OSSs regard each other as their primary competitors.
 - Non-OSS do not constrain OSS pricing.
 - OSS contested this definition but without luck.
- **FTC Analysis:**
 - First use of scanner data for antitrust evaluation (18 months).
 - Analysis of price variation of products in different markets depending on the number and proximity of rivals.
 - FTC concluded that an average price increase of 8.5% was to be expected after the merger.

- **Dynamic Issues:**

- Merger would create important entry barriers.
 - Substantial economies of scale.
 - Economies of multistore operation (due to distribution).
 - An Office Depot study indicated that in most cities there was no potential for additional stores. Thus entry would be preempted.

- **Efficiency Gains:**

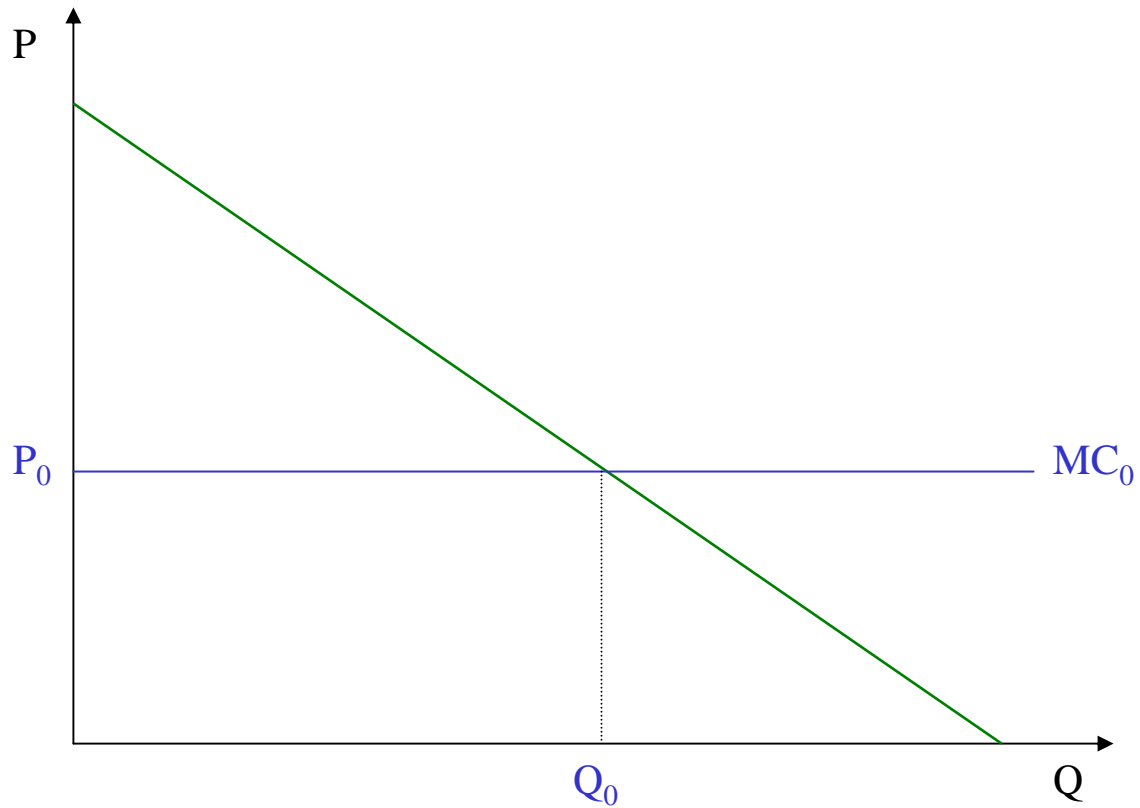
- Efficiency gains claimed by the merging parties were exaggerated.
 - They should include only those that are merger specific.
 - They should not include those that can be achieved absent the merger, for instance, through internal growth or scale economies.

Why Efficiency Gains are Important Analysis?

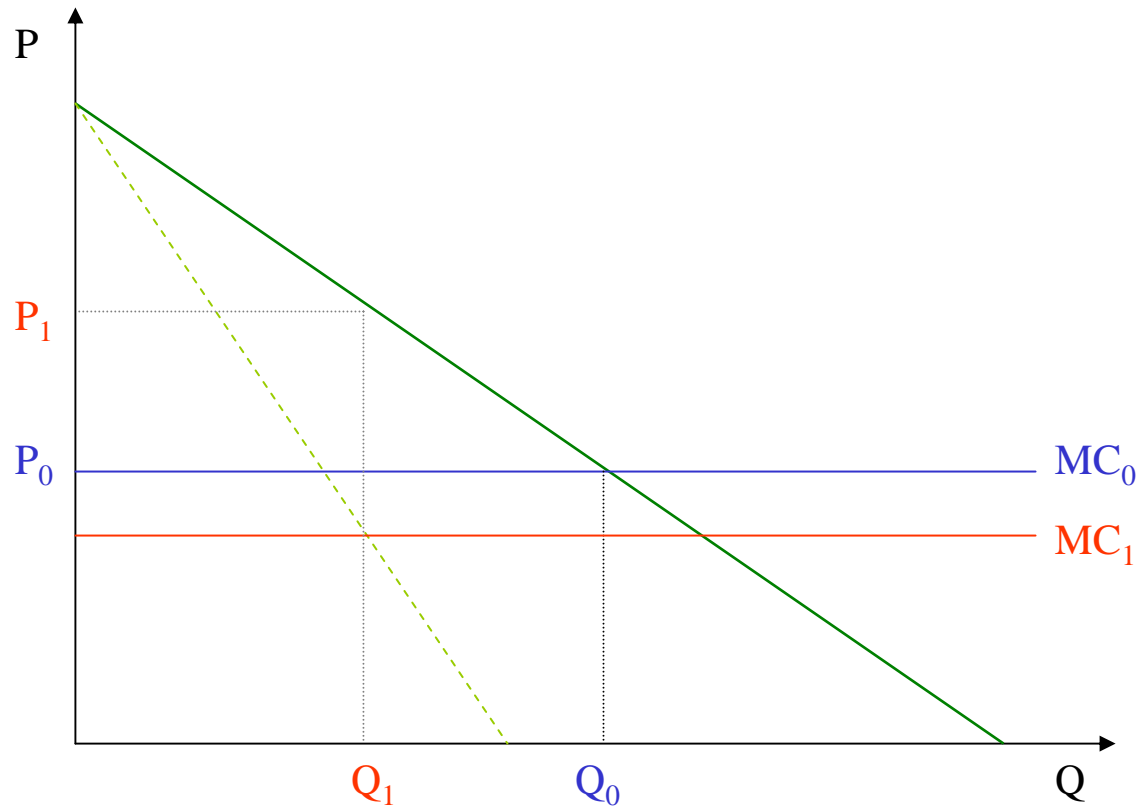
- Horizontal mergers consolidate the production decisions of two firms that market horizontally differentiated.
- **Benefits:** Efficiency gains.
- **Costs:** Increase of market power:
 - Increase in market concentration and market power.
 - Change in competition regimes.
 - Creation of a leader in prices or quantities.
 - Ability to introduce price discrimination.

- Before the merger:
 - Two identical firms compete in a homogeneous product market.
 - Their constant marginal cost are the same.
 - They compete in prices (Bertrand).
- After the merger:
 - The duopoly becomes a monopoly.
 - Marginal costs are reduced by 1.4%.
- Question: Should we allow the merger?

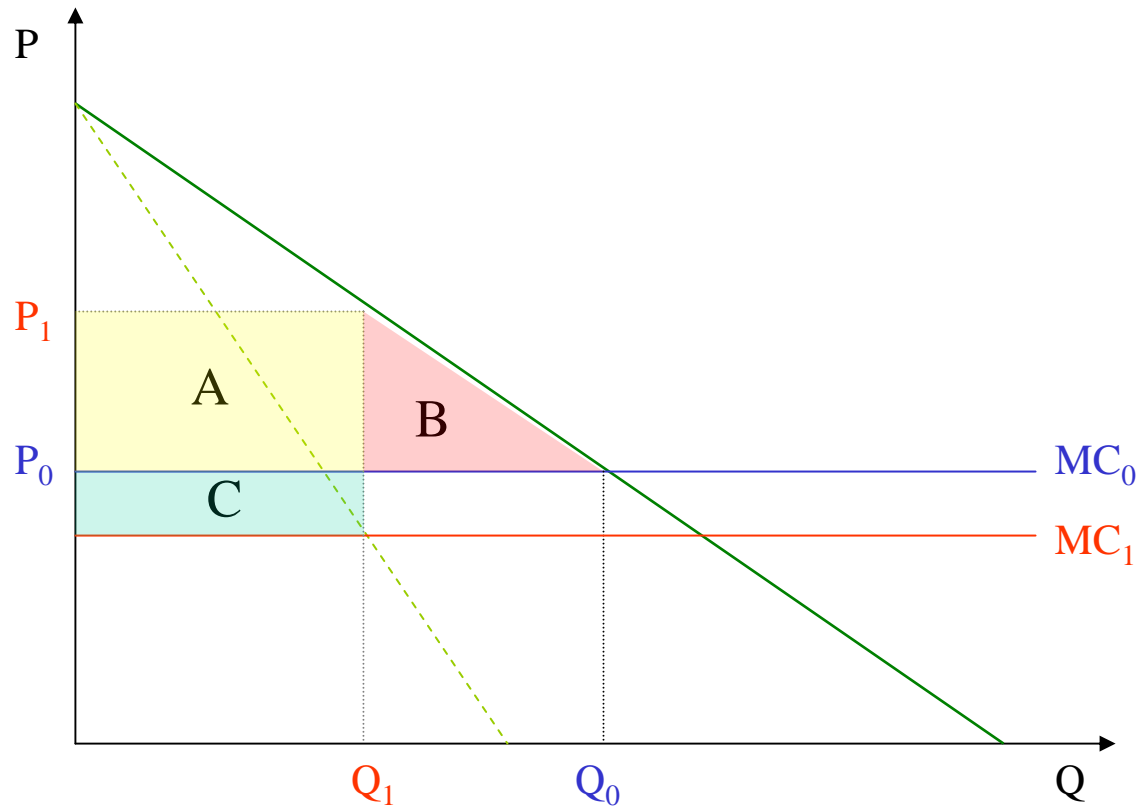
- Before the merger:



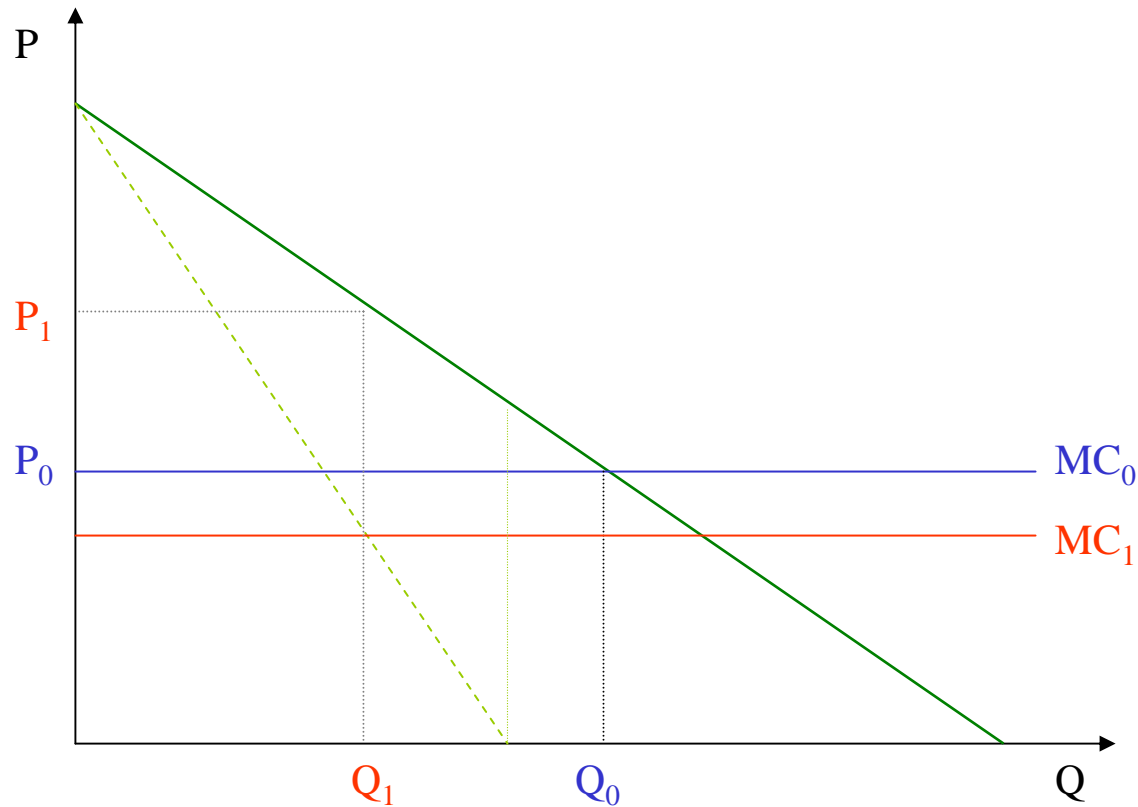
- After the merger:



- Welfare analysis. Allow merger if $C > B$:

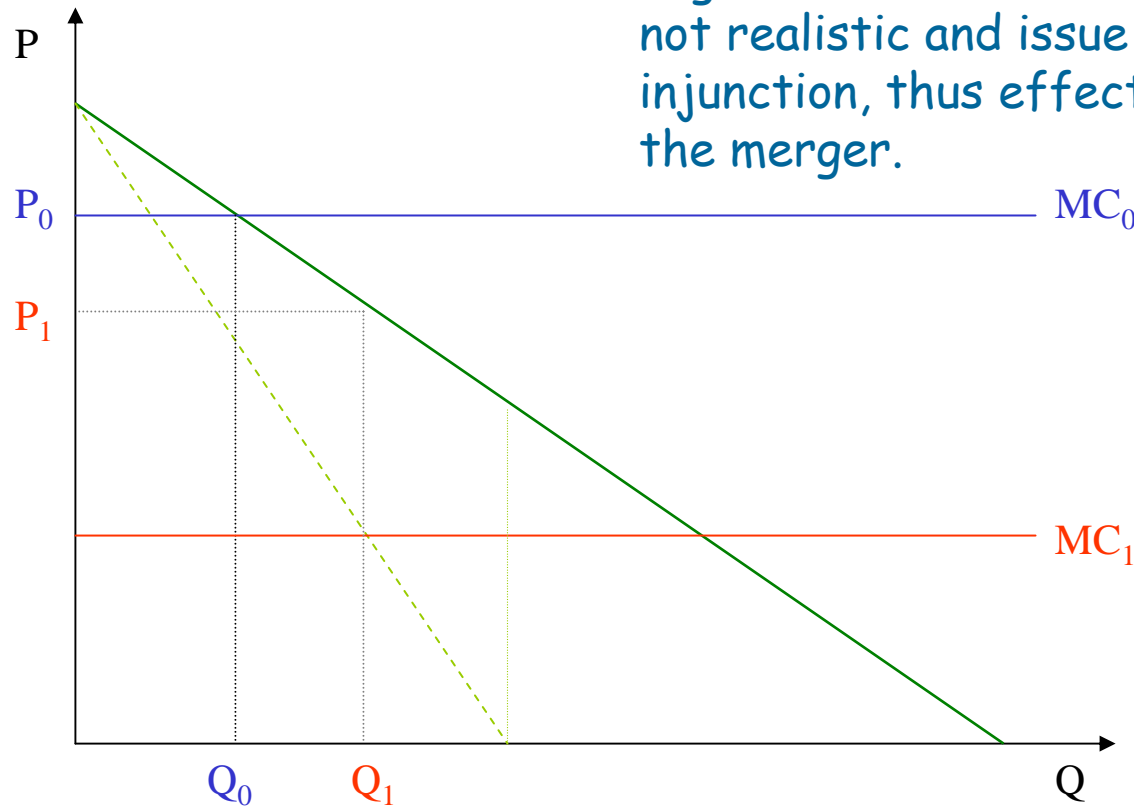


- Recently welfare effects of efficiency gains are taken into account but the Merger Guidelines indicate that they are relevant only if they result in a **lower price** to consumers. This is not the case with a 1.4% reduction in the marginal cost.



- If cost reduction is much more substantial as claimed by Office Depot and Staples...

But the judge considered that this huge cost reduction estimation was not realistic and issue a preliminary injunction, thus effectively stopping the merger.



Heinz - Beech-Nut

- **Baby Food Industry:**
 - Gerber: 65%
 - Premium.
 - Sold everywhere.
 - Heinz: 17%.
 - Value brand.
 - 15% cheaper than Gerber.
 - Sold in the Midwest.
 - Beech-Nut: 15%.
 - Premium brand.
 - Same price than Gerber or slightly below.
 - Sold in Northeast and Far West.

- **More on Baby Food Industry:**
 - Supermarkets carry only two brand.
 - High shelf space and restocking costs.
 - Product lines include many varieties sold in small jars.
 - Substitution between Heinz and Beech-Nut is difficult.
 - Beech-Nut and Heinz compete for shelf space.
 - Two-part tariff payment scheme to supermarket:
 - Fixed: for each product.
 - Variable: discounts over the wholesale price
 - » This gives the retailer an incentive to lower final price of the product and sell more.
 - Gerber does not pay.

- **Merger:**

- The acquisition of Beech-Nut by Heinz aimed to reduce competition for shelf space but at the same time there was an important potential for cost reduction.
- Heinz planned to move production to his modern, highly automated, and largely underutilized plant in Pittsburgh.
- Heinz will also consolidate the distribution channels of the two brands.
- Heinz intended to sell through the Beech-Nut brand only because this brand had better reputation among consumers.

- **FTC challenge:**

- This industry was highly concentrated.
 - Before the merger: HHI = 4775.
 - If the merger went through = 5282.
- Entry of other potential competitors was not to be expected.
 - The effective duopoly will represent a major entry barrier for any potential competitor.
- The merger involves the only two firms that compete in prices with Gerber.
 - Coordination by Heinz and Gerber is currently prevented by the existence of Beech-Nut that limits the ability of the other firms.
 - The same can be said of Heinz in markets where Gerber and Beech-Nut are dominant.

- **FTC challenge (more):**
 - Heinz and Beech-Nut will not compete for shelf space:
 - The new firm has a dominant strategy of removing the incentive agreements previously given to the retailers:
 - It reduces costs.
 - Retailers do not have incentive to lower final price.
 - Soften the price competition with Gerber.
 - Claimed efficiency costs (the only positive aspect of the merger) were unproven and overstated.
 - Furthermore it could have been achieved by:
 - Investment in brand reputation by Heinz.
 - Investment in plant modernization by Beech-Nut.
 - Choice set of consumers gets reduced.

- **Courts Decisions:**

- District court sided with the merging firms.
 - Accepted the argument of extraordinary cost reduction.
 - Believed that this new and more competitive firm will compete more aggressively with Gerber.
- FTC appealed and a panel of judges unanimously reversed the district court decision.
 - They found that the evidence presented to justify cost reductions and the difficulty to later collude with Gerber was insufficient.
- The decision was to enter a preliminary injunction to stop temporarily the merger process until approved by the FTC.
 - The increased costs of litigation and the precedent of the panel lead the firms to give up their attempt to merge.