

Microeconomics, Module 13, "Market Power, Collusion, and Oligopoly" (Chapter 11)

(Overview and Concepts)

(See the attached PDF file.)

- Market power is limited by the threat of entry.
- This modules deals with strategies to get monopoly power.

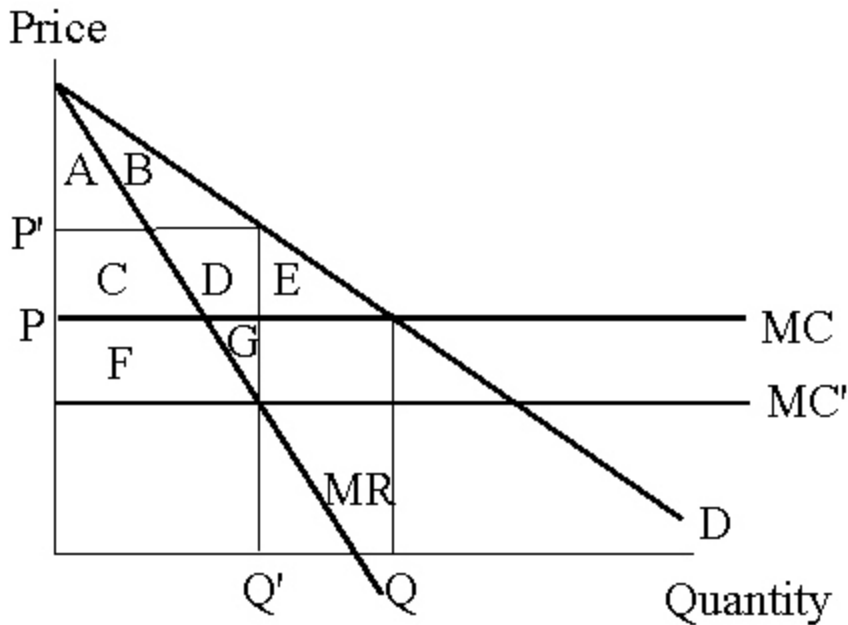
Part 1: Acquiring Market Power

Mergers are of two types:

- *Horizontal merger* by producers of the same product.
- *Vertical merger* by the producer and the user of an input.

Two reasons for *horizontal integration*:

- Create economies of scale (socially desirable).
- Enhance monopoly power (socially undesirable).



If the industry is competitive before the merger, it produces Q and sells at price P. After the merger, the industry is monopolistic, with a marginal cost curve of MC'. It produces Q', which it sells at a price of P'.

	Competition	Monopoly
Consumers' Surplus	A + B + C + D + E	A + B
Producers' Surplus		C + D + F + G
Social Gain	A+B+C+D+E	A+B+C+D+F+G

The merger is socially valuable if $F + G > E$. The merger trades *technical efficiency* for *dead weight loss*.

If MC' is much lower than MC , then $P' < P$, $Q' > Q$, and everyone is better off.

Question: Does this happen often?

Answer: It is rare that two firms merge to create an absolute monopoly and the social gain from economies of scale outweighs the monopoly power. But two firms out of a dozen in the industry may merge, and the gain from economies of scale outweighs the loss from their slight increase in monopoly power.

Vertical Integration can reduce monopoly power in some scenarios.

If one monopolist sells input to another monopolist and they merge, consumers' surplus + producers' surplus *may* increase. The equilibrium price *may* decrease, and consumers *may* benefit. Vertical mergers are not always an improvement. The social effect depends on the specifics of market structure and the shapes of demand curves and cost curves.

Microeconomic theory doesn't unambiguously predict the effect of vertical mergers on:

- monopoly power
- efficiency
- the price of the final product

Part 2: Predatory Pricing

A low price causes losses but drives out rivals. Economists are skeptical about the prevalence of predatory pricing, because

- Rivals can *re-emerge* when the monopolist raise prices.
- The predator (monopolist) *loses more than others* because it has a large market share.
- The prey (the competition) can *borrow* to get through the price war.

In some circumstances, predatory pricing *may* be profitable, particularly if the monopolist drives out one competitor to *warn others not to enter*.

If the monopolist buys out a rival (to eliminate competition) rather than lowering prices to drive out the rival, this may encourage new entrants who hope to be bought out.

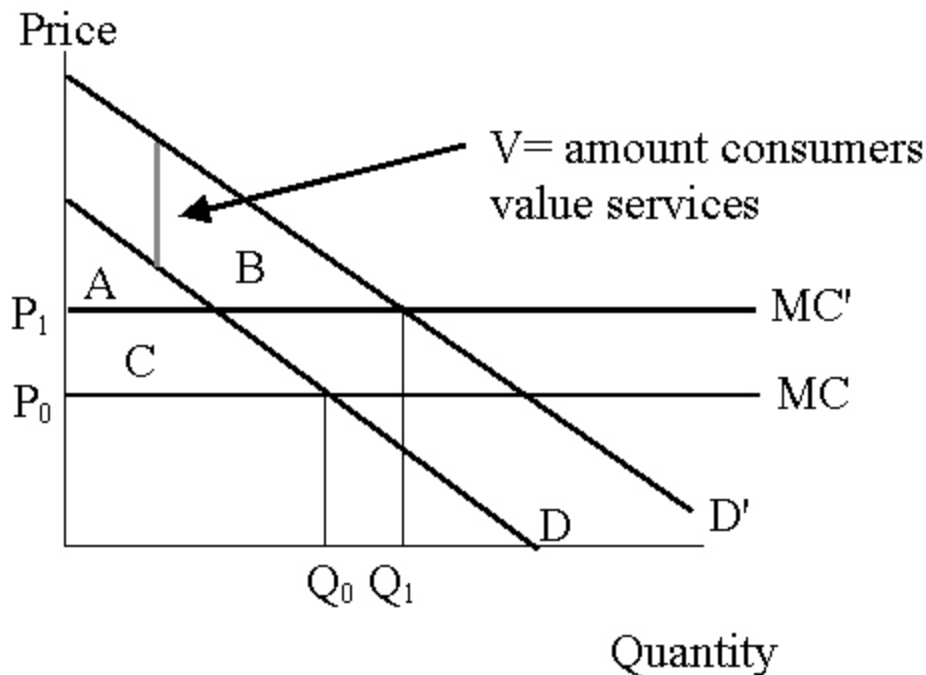
Part 3: Resale Price Maintenance (“Fair Trade”)

The producer sets a retail price to be used by all retailers. This is *not* an attempt to keep wholesale prices high. Price is determined by quantity; to raise the price, restrict output.

One possible explanation of resale price maintenance (not the standard explanation):

Suppose products are sold at showrooms. Consumers come to full-service retailers for questions, but they buy at discount stores to get a lower price. In this scenario, all retailers would eliminate service, producers of high quality goods would sell less, and buyers would be less happy with their purchases.

Retailers compete on service, providing additional services at a higher price:



Services cost $P_1 - P_0$. Demand goes up by V , consumers' value of the services, and output goes up from Q_0 to Q_1 .

If $Q_1 > Q_0$, then $V > P_1 - P_0$; the value of the services exceeds the cost of producing them. Consumers' surplus increases from $(A+C)$ to $(A+B)$.

We assumed P_0 is given, but if resale price maintenance makes the good more attractive

- the demand curve moves out
- the producer sets a higher price

Consumers *keep only part* of increase in social welfare, though consumers' surplus is still *higher* than without resale price maintenance.

Landsburg estimates that *dealer service* explains about 65% of resale price maintenance.

Part 2: Collusion, Game Theory and Prisoner's Dilemma

- Collusion is an agreement to set prices and outputs.
- A cartel is a group of firms engaged in collusion.

Cartels are hard to maintain, because each member of the cartel has incentives to cheat. Economists explain the difficulties of maintaining a cartel with the prisoner's dilemma.

Prisoner's Dilemma

		<i>Prisoner B</i>	
		<i>Confess</i>	<i>Don't Confess</i>
<i>Prisoner A</i>	<i>Confess</i>	<i>Each Gets 5 Years</i>	<i>A Gets 10 Years; B Gets 1 Year</i>
	<i>Don't Confess</i>	<i>A Gets 1 Year; B Gets 10 Years</i>	<i>Each Gets 2 Years</i>

Each prisoner says: "If I don't confess, my partner has an incentive to confess and get only one year in prison, in which case I get 10 years in prison." So each one confesses, and each gets 5 years in prison. This is not Pareto optimal. It would be better for the two prisoners if neither confessed, and each got 2 years in prison.

The prisoners can solve their dilemma if they agree to restrict their options so that neither confesses. This solution works if the cost of coercion to each prisoner is less than the benefits he or she gets from the coercion to the other prisoner.

In real life, the prisoner's dilemma is continuous. A member of a cartel who cheats loses the benefits of the cartel in future periods.

- If the prisoner's dilemma has a definite ending date, there is no incentive to establish a reputation not to cheat.
- If the prisoner's dilemma has no ending date, a "tit for tat" strategy works and the prisoners (members of a cartel) may co-operate.

Breakdown of Cartels

To be profitable, a cartel must hold output *below* the competitive quantity.

Each member of the cartel has an incentive to cheat (i.e., to lower prices) if he or she can get away with it; this drives the cartel price down to the competitive price. A cartel works only if it has a credible enforcement mechanism (often the government).

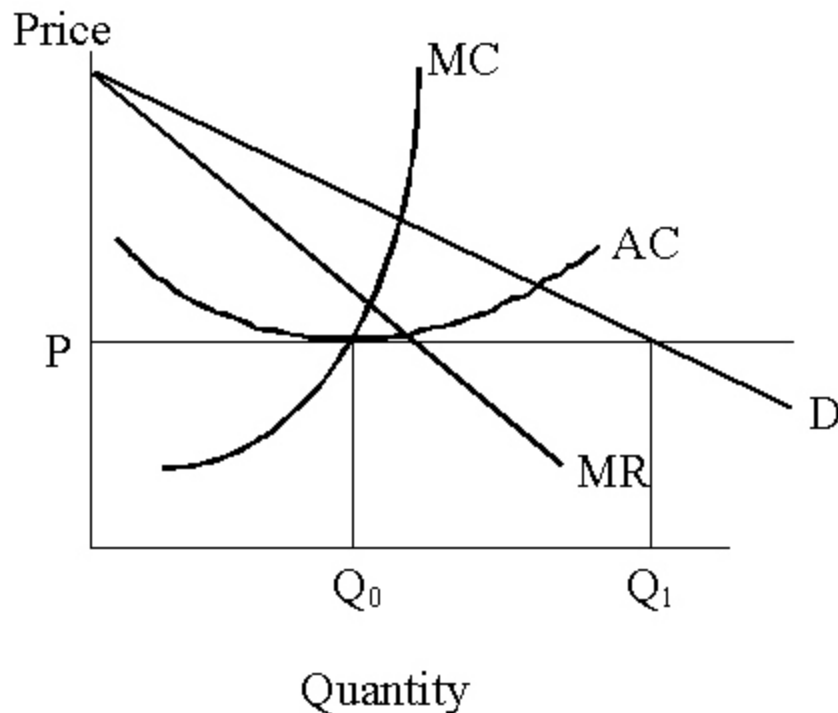
Part 4: Oligopoly

An oligopoly is a small number of firms who can influence market conditions. Each firm has some monopoly power. The behavior of the firms depends on whether they are threatened by potential entry.

Part 4A: Contestable Markets

Entry and exit are costless (firms can freely enter and exit).

Even a single firm producing a unique product cannot price monopolistically if other firms can easily enter the market. Economic profits encourage entry of other firms which destroys the profits.



Other firms enter the market if the price is greater than P, the competitive price.

If the monopolistic firm supplies Q_0 , but demand is Q_1 , there is room for Q_1/Q_0 firms.

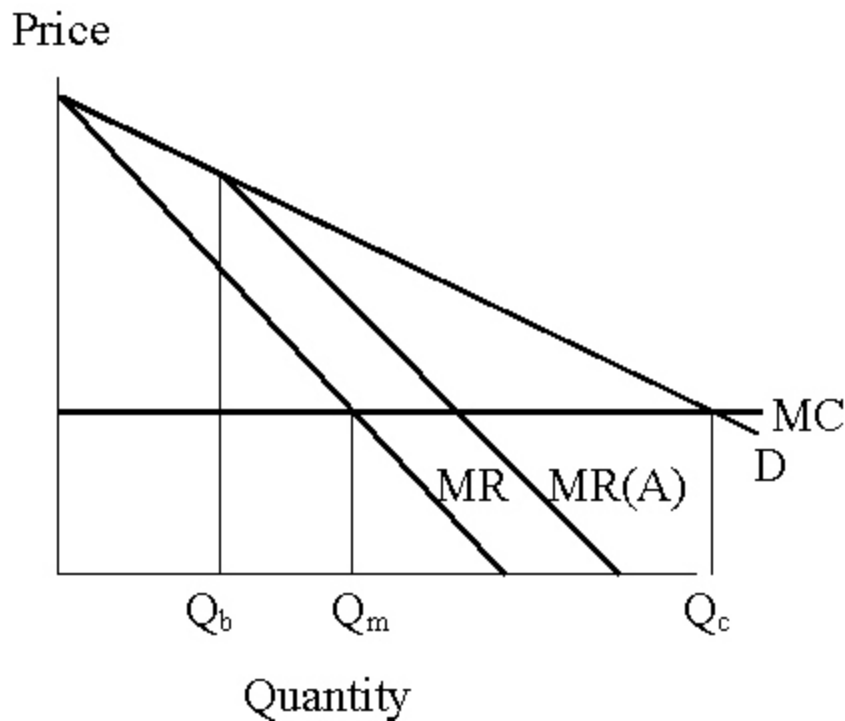
In contestable market with identical firms whose average cost (AC) curves cross the industry demand curve where they are upward sloping, price = average cost = marginal cost: $P = AC = MC$.

Part 4B: Oligopoly with fixed number of firms

- No threat of entry by other firms.
- Behavior of firms in the oligopoly is hard to predict.
- A cartel (collusion) is one possibility. If the firms do not collude, their actions depend on their *expectations of others' behavior*.

Part 4C: Cournot Model

Each firm considers its rivals' *output* to be fixed.



A competitive industry produces output Q_c .

If the industry demand curve is linear and the marginal cost curve is horizontal, a monopolist produces output $Q_m = \frac{1}{2} \times Q_c$, since the marginal revenue curve has twice the slope of the demand curve.

In a Cournot oligopoly, if firm B produces output Q_b , firm A produces the monopoly quantity of $\frac{1}{2} \times (Q_c - Q_b)$. Since the firms are identical,

$$\begin{aligned} Q_a &= Q_b \\ Q_a &= \frac{1}{2} \times (Q_c - Q_a) \\ Q_a &= \frac{1}{3} \times Q_c \end{aligned}$$

{The final exam will *not* test the mathematics of the Cournot model.}

Part 4D: Bertrand Model

Each firm considers its rival's *price* to be fixed.

If the price P is more than marginal cost (MC):

Each firm tries to undercut its rivals by offering a slightly lower price. If consumers are price conscious and rivals don't meet the price cut, a firm can raise its market share (and make additional profits) by a small price cut. The firms continue cutting price until $P = MC$. The output Q is the same as under competition.

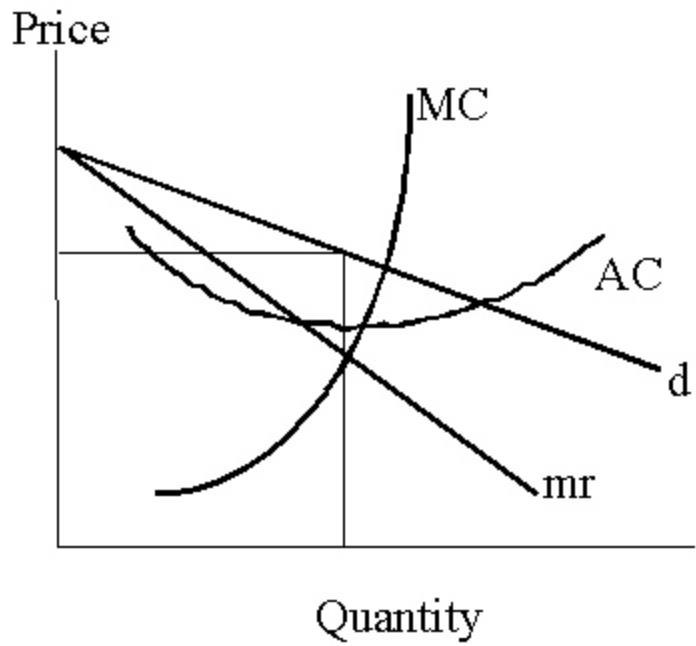
In both the Bertrand and Cournot models, the firms have dubious assumptions about rivals.

{The final exam will *not* test the mathematics of the Bertrand model.}

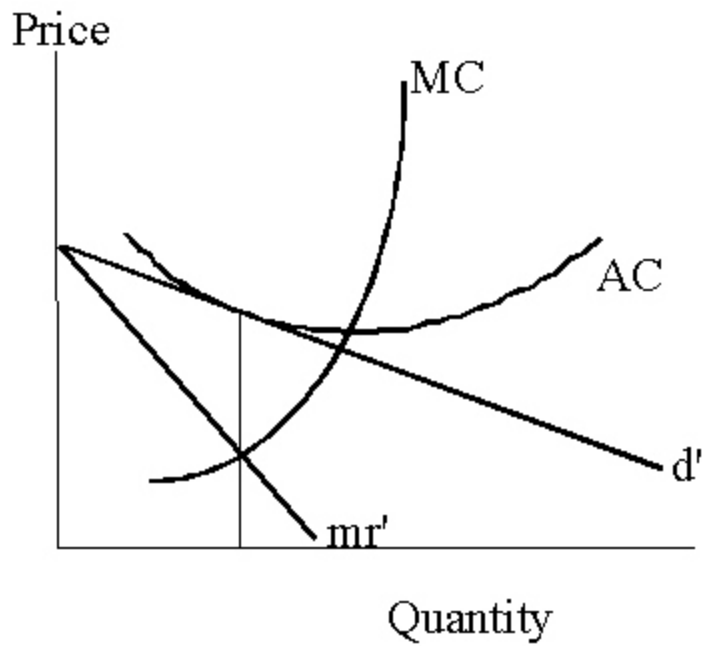
Part 5: Monopolistic Competition and Product Differentiation

- Firms sell similar but *differentiated* products.
- Firms earn profits in the *short run*.
- In the *long-run*, entry by other firms leads to zero profits.

Short Run



Long run



Welfare aspects of monopolistic competition: is it beneficial or harmful?

- Price is more than marginal cost ($P > MC$), so output is sub-optimal.
- Firms are not producing at minimum average cost; they could produce the same output at lower cost.
- Sometimes firms advertise to lure each others' customers. If advertising just shifts customers among firms, this is an unnecessary social loss.
- **But:** monopolistic competition gives consumers differentiated products (a benefit).