



Micro

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ECON

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CHAPTER
10
*Monopolistic
Competition
and Oligopoly*

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Monopolistic Competition



- **Characteristics**
 - **Many producers**
 - **Low barriers to entry**
 - **Slightly different products**
 - **A firm that raises prices: lose some customers to rivals**
 - **Some control over price ‘Price makers’**
 - **Downward sloping D curve**
 - **Act independently**

Monopolistic Competition

- **Product differentiation**
 - **Physical differences**
 - **Appearance; quality**
 - **Location**
 - **Spatial differentiation**
 - **Services**
 - **Product image**
 - **Promotion; advertising**



Short-Run Profit Max. or Loss Min.

- Demand D
- Marginal revenue MR
- Average total cost ATC
- Average variable cost AVC
- Marginal cost MC
- Maximize profit
 - Produce the quantity: $MR=MC$
 - Price: on D curve



Max. Profit or Min. Loss in Short-Run

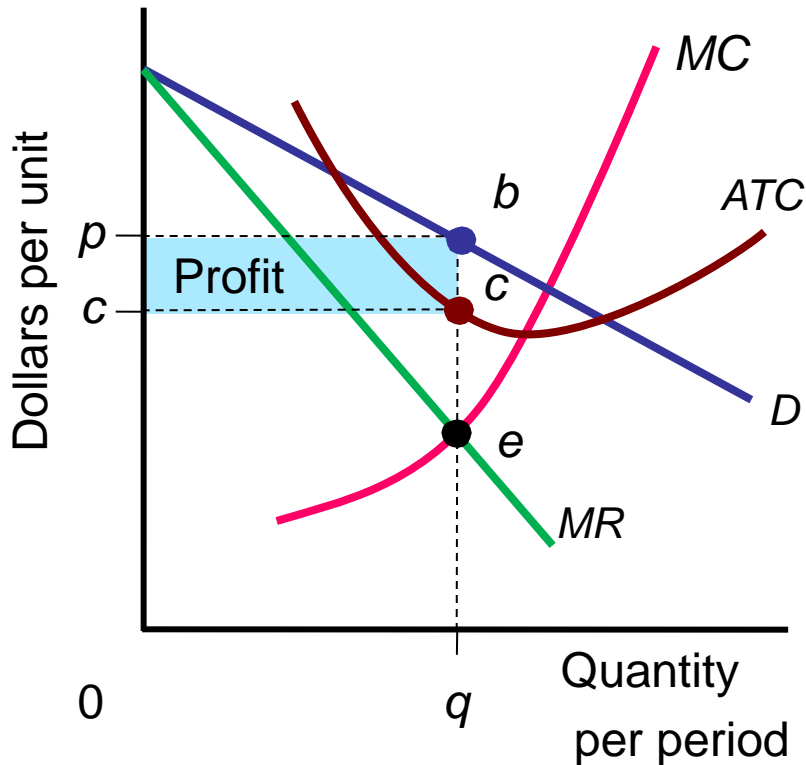


- If $p > ATC$
 - Economic profit
- If $ATC > p > AVC$
 - Economic loss
 - Produce in short run
- If $p < AVC$: AVC curve above D curve
 - Economic loss
 - Shut down in short run

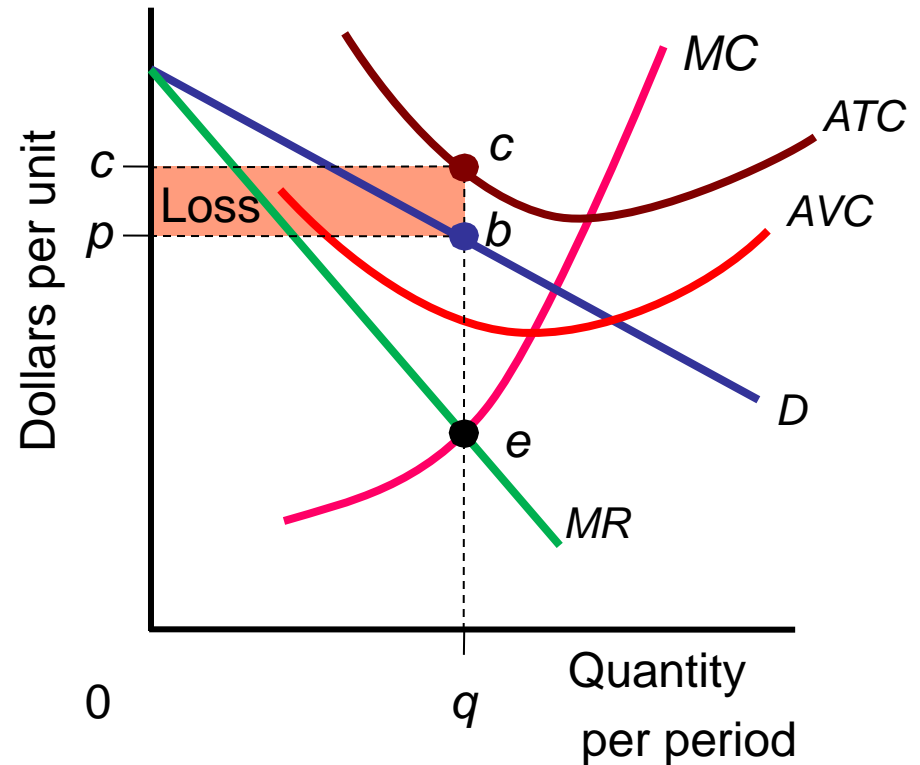
LO¹

Monopolistic Competitor in the Short Run

(a) Maximizing short-run profit



(b) Minimizing short-run loss



(a) Economic profit = $(p - c) \times q$

(b) Economic loss = $(c - p) \times q$

The firm produces the output at which $MR = MC$ (point e) and charges the price indicated by point b on the downward sloping D curve.

Zero Economic Profit in the Long Run



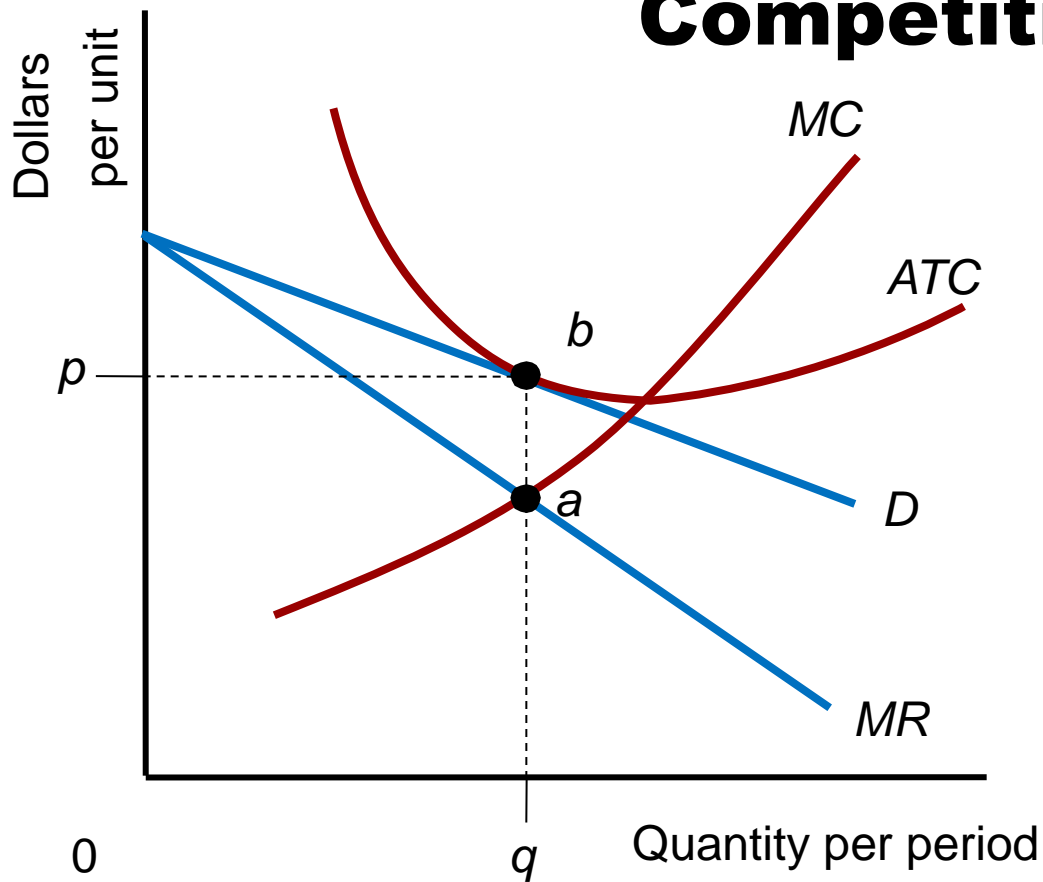
- **Short run economic profit**
 - **New firms enter the market**
 - **Draw customers away from other firms**
 - **Reduce demand facing other firms**
 - **Profit disappears in long run**
 - **Zero economic profit**

Zero Economic Profit in the Long Run



- **Short run economic loss**
 - **Some firms exit the market**
 - **Their customers switch to other firms**
 - **Increase demand facing the remaining firms**
 - **Loss is erased in the long run**
 - **Zero economic profit**

Long-Run Equilibrium in Monopolistic Competition



Economic profit in short run:

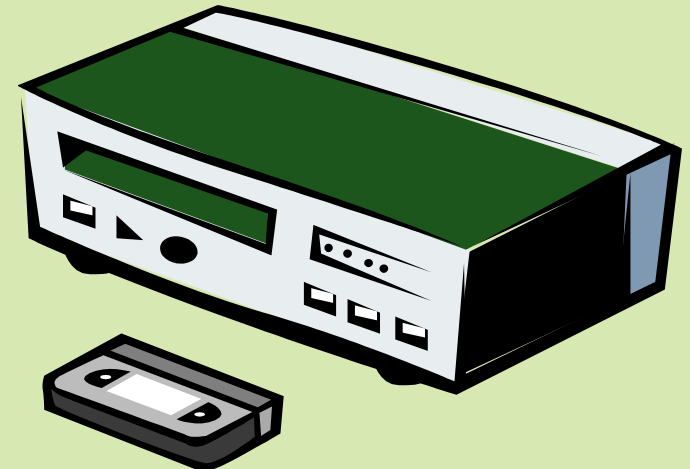
- new firms enter the industry in the long run
- reduces the D facing each firm
- Each firm's D shifts leftward until:
 - $MR=MC$ (point a) and
 - D is tangent to ATC curve: point b
- Economic profit = 0 at output q

No more firms enter; the industry is in long-run equilibrium.

The same long-run outcome occurs if firms suffer a short-run loss. Firms leave until remaining firms earn just a normal profit.

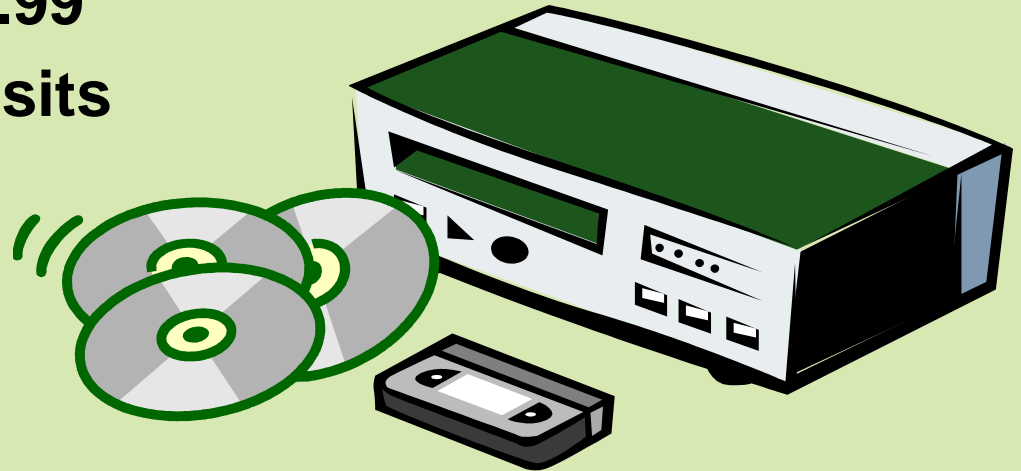
Fast Forward to Creative Destruction

- ◆ 1970s, videocassettes, VCRs; expensive
 - ◆ Video rental stores
 - ◆ Security deposits
 - ◆ Membership fees (\$100)
 - ◆ Little competition
 - ◆ Short run economic profit



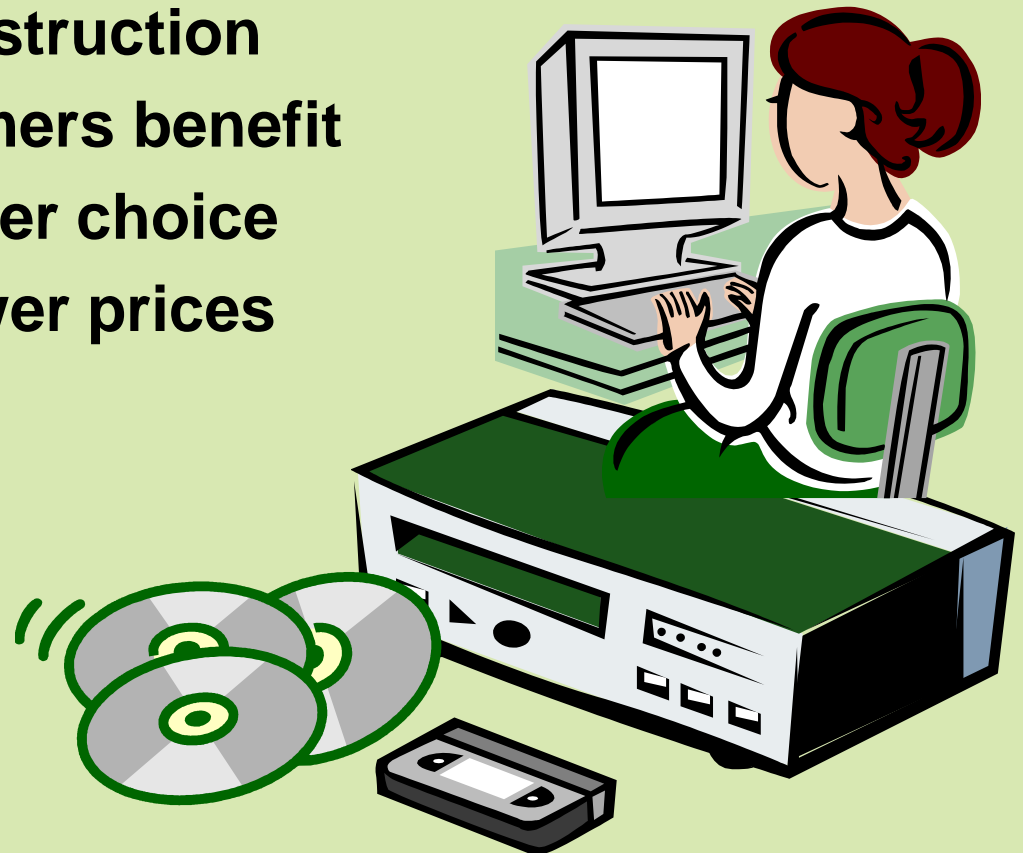
Fast Forward to Creative Destruction

- ◆ Supply of rental stores increased
 - ◆ Faster than demand
- ◆ Substitutes
 - ◆ Cable channels; pay-per-view; DVDs
 - ◆ On-demand movies; download from internet
- ◆ Rental rates: \$0.99
- ◆ No fees or deposits



Fast Forward to Creative Destruction

- ◆ Online rental services
 - ◆ ‘Out with the old, in with the new’
 - ◆ Creative destruction
 - ◆ Consumers benefit
 - ◆ Wider choice
 - ◆ Lower prices



Monopolistic vs. Perfect Competition



- **Both**
 - Zero economic profit in long run
 - $MR=MC$ for quantity
 - where D is tangent to ATC
- **Perfect competition**
 - Firm's demand: horizontal line
 - Produces at minimum average cost
 - Productive and allocative efficiency

LO¹

Monopolistic vs. Perfect Competition

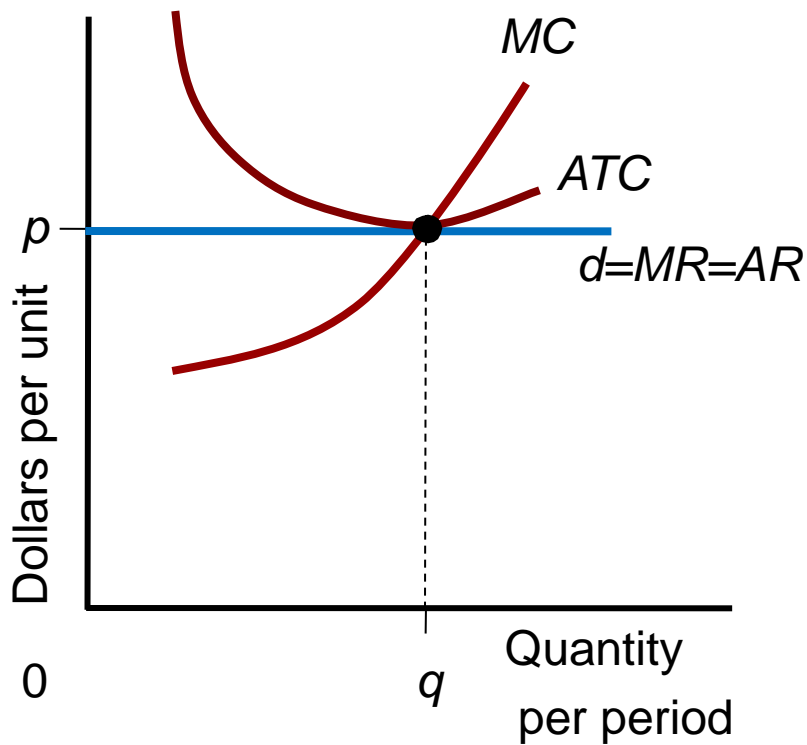


- **Monopolistic competition**
 - Downward sloping D
 - Don't produce at minimum average cost
 - Excess capacity
 - Could increase output
 - Lower average cost
 - Increase social welfare
 - Produces less, charges more

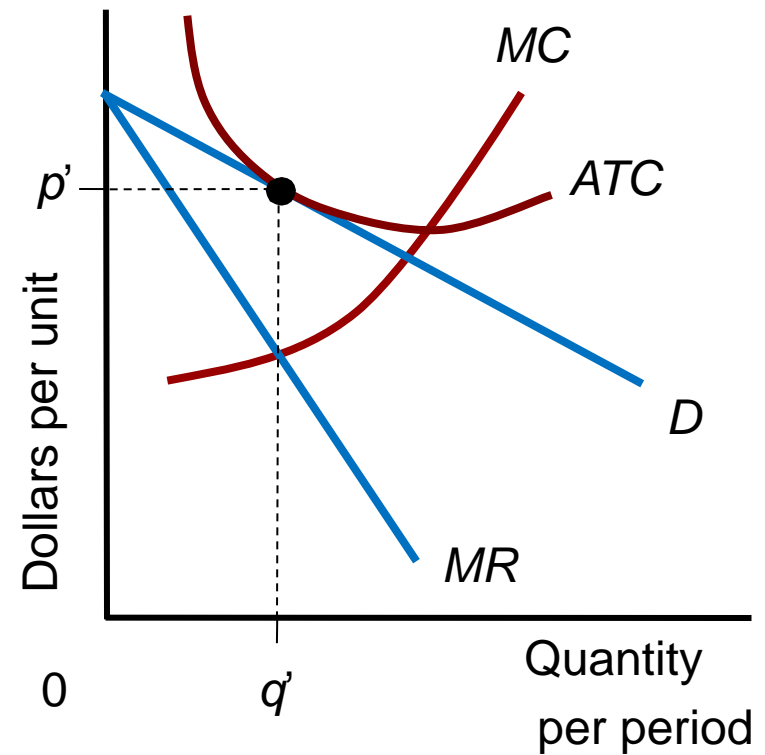
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Perfect Competition Versus Monopolistic Competition in Long-Run Equilibrium

(a) Perfect competition



(b) Monopolistic competition



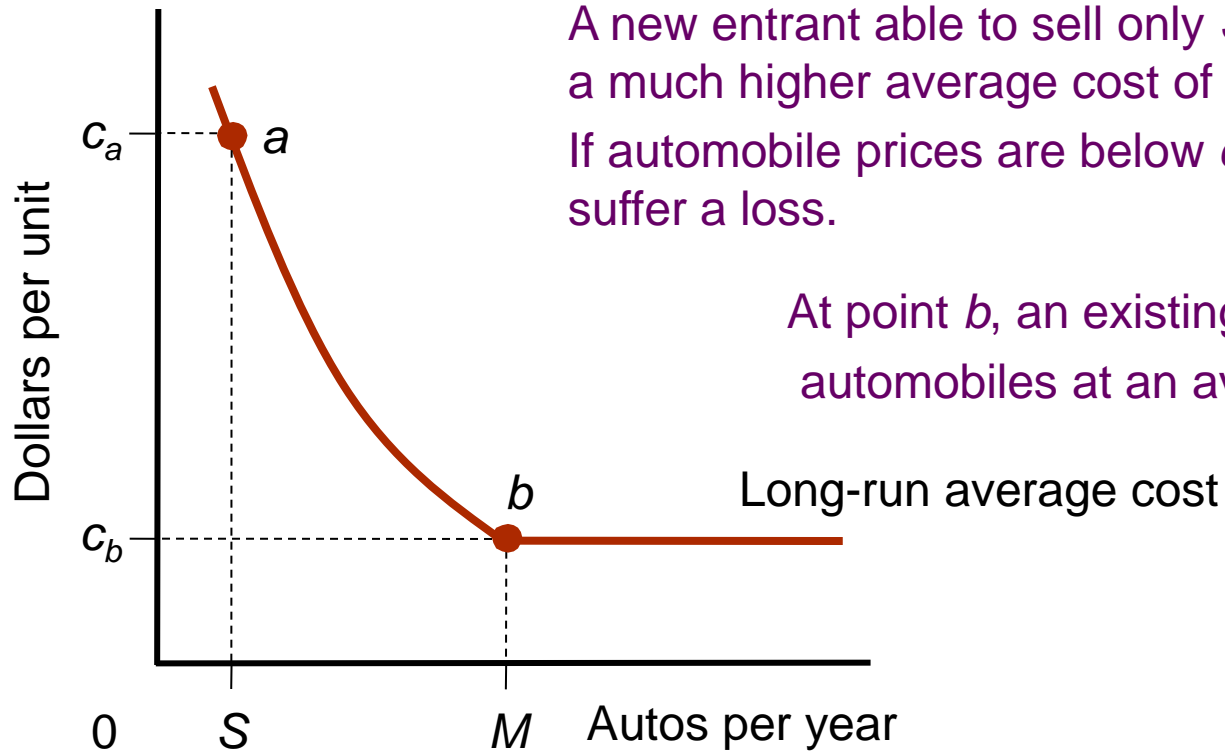
Cost curves are assumed the same. The monopolistically competitive firm produces less output and charges a higher price than does a perfectly competitive firm. Neither earns economic profit in the long run.

Oligopoly

- **Few sellers**
- **Barriers to entry**
 - **Economies of scale**
 - **Legal restrictions**
 - **Brand names**
 - **Control over an essential resource**
 - **High cost of entry**
 - **Start-up costs; advertising**
- **Crowding out the competition**



Economies of Scale as a Barrier to Entry



A new entrant able to sell only S automobiles would incur a much higher average cost of c_a at point a .

If automobile prices are below c_a , a new entrant would suffer a loss.

At point b , an existing firm can produce M or more automobiles at an average cost of c_b .

In this case, economies of scale serve as a barrier to entry, insulating firms that have achieved minimum efficient scale from new competitors.

Varieties of Oligopoly

- **Undifferentiated oligopoly**
 - **Commodity**
 - **Interdependent firms**
- **Differentiated oligopoly**
 - **Product differentiation**
 - **Physical qualities**
 - **Sales location**
 - **Services**
 - **Product image**



Models of Oligopoly

- **Interdependence**
 - **Cooperation or**
 - **Fierce competition**
- **Collusion**
- **Price leadership**
- **Game theory**

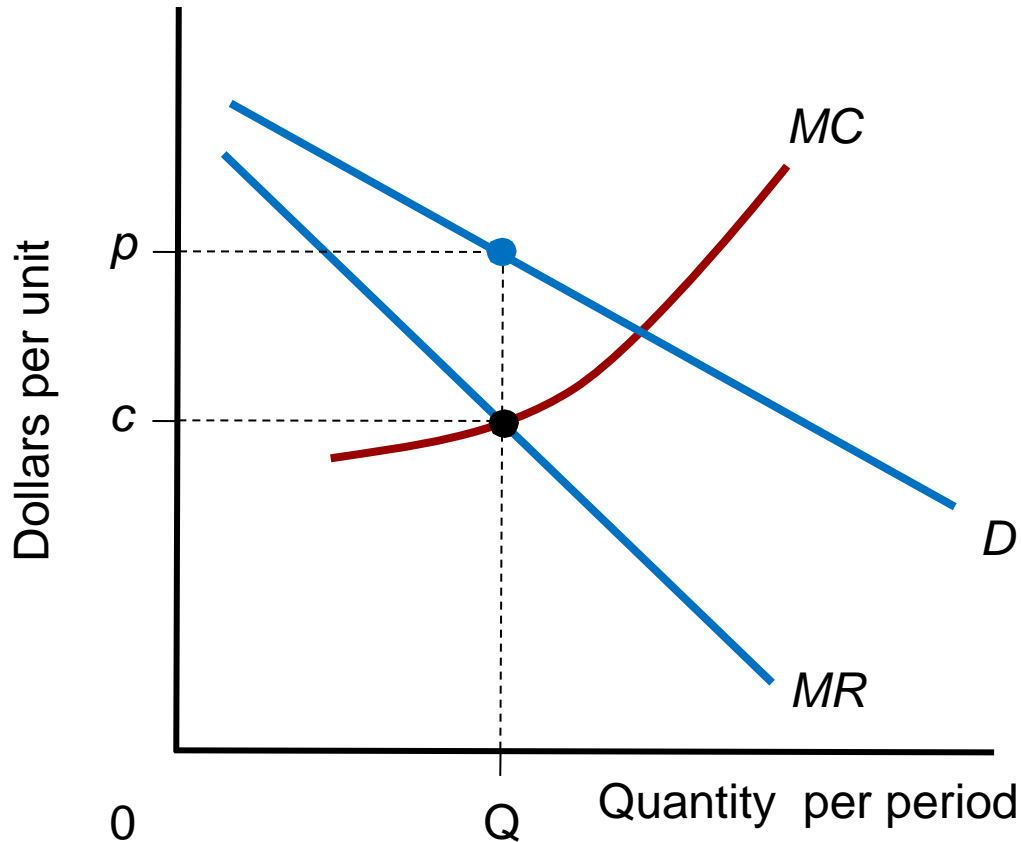


Collusion and Cartels

- **Collusion**
 - Agreement among firms to
 - Divide the market
 - Fix the price
- **Cartel**
 - Group of firms that agree to collude
 - Act as monopoly
 - Increase economic profit
- **Illegal in U.S.**



Cartel as a Monopolist



A cartel acts as a monopolist.

Here, D is the market demand curve, MR the associated marginal revenue curve, and MC the horizontal sum of the marginal cost curves of cartel members (assuming all firms in the market join the cartel).

Cartel profits are maximized when the industry produces quantity Q and charges price p .

Collusion and Cartels

- Maximize profit
 - Allocate output among cartel members
 - Same MC of the final unit produced
- Difficulties to maintain a cartel:
 - Differentiated product
 - Differences in average cost
 - Many firms in the cartel
 - Low barriers to entry
 - Cheating



Price Leadership

- Informal, tacit collusion
- Price leader
 - Sets the price for the industry
 - Initiate price changes
 - Followed by the other firms



Price Leadership

- **Obstacles**
 - **U.S. antitrust laws**
 - **Product differentiation**
 - **No guarantee others will follow**
 - **Barriers to entry**
 - **Cheating**



Game Theory



- **Behavior of decision makers**
 - **Series of strategic moves and countermoves**
 - **Among rival firms**
 - **Choices affect one another**
- **General approach**
 - **Focus: each player's incentives to cooperate or compete**



Game Theory



- **Prisoner's dilemma**
 - Two thieves; cannot coordinate
- **Strategy**
 - The player's game plan
- **Payoff matrix**
 - Table listing the rewards
- **Dominant-strategy equilibrium**
 - Each player's action does not depend on what he thinks the other player will do

LO⁴

The Prisoner's Dilemma Payoff Matrix (years in jail)

Ben

		<i>Jerry</i>	
		Confess	Clam up
<i>Ben</i>	Confess	5 / 5	0 / 10
	Clam up	10 / 0	1 / 1

Clam up

Exhibit 7

Price-Setting Payoff Matrix (profit per day)

		Exxon	
		Low price	High price
Texaco	Low price	\$500 \$500	\$1,000 \$200
	High price	\$200 \$1,000	\$700 \$700

Nash Equilibrium: each player maximizes profit, given the price chosen by the other.

Neither can increase profit by changing the price, given the price chosen by the other.

Cola War Payoff Matrix (annual profit in billions)

		<i>Coke</i>	
		Big budget	Moderate budget
<i>Pepsi</i>	Big budget	\$2 / \$2	\$4 / \$1
	Moderate budget	\$1 / \$4	\$3 / \$3

Game Theory



- **One-shot versus repeated games**
 - **One-shot game**
 - **Game is played just once**
 - **Repeated games**
 - **Establish reputation for cooperation**
 - **Tit-for-tat strategy**
 - **Highest payoff**
- **Coordination game**



Oligopoly vs. Perfect Competition

- ◆ Oligopoly
 - ◆ If firms collude or operate with excess capacity
 - ◆ Higher price
 - ◆ Lower output
 - ◆ If price wars
 - ◆ Lower price
 - ◆ Higher profits in the long run



Timely Fashions Boost Profit for Zara

◆ Zara

- ◆ Largest fashion retailer in Europe
- ◆ Owns workshops and factories
 - ◆ Designing, fabric dyeing, ironing
- ◆ Real-time sales data
- ◆ Direct shipments from factory to shops
- ◆ New items twice a week
- ◆ Prime store location
- ◆ Word of mouth



Comparison of Market Structures

	Perfect Competition	Monopoly	Monopolistic Competition	Oligopoly
Number of firms	Most	One	Many	Few
Control over price	None	Complete	Limited	Some
Product differences	None	None	Some	None or some
Barriers to entry	None	Insurmountable	Low	Substantial
Examples	Wheat	Local electricity	Convenience stores	Automobiles