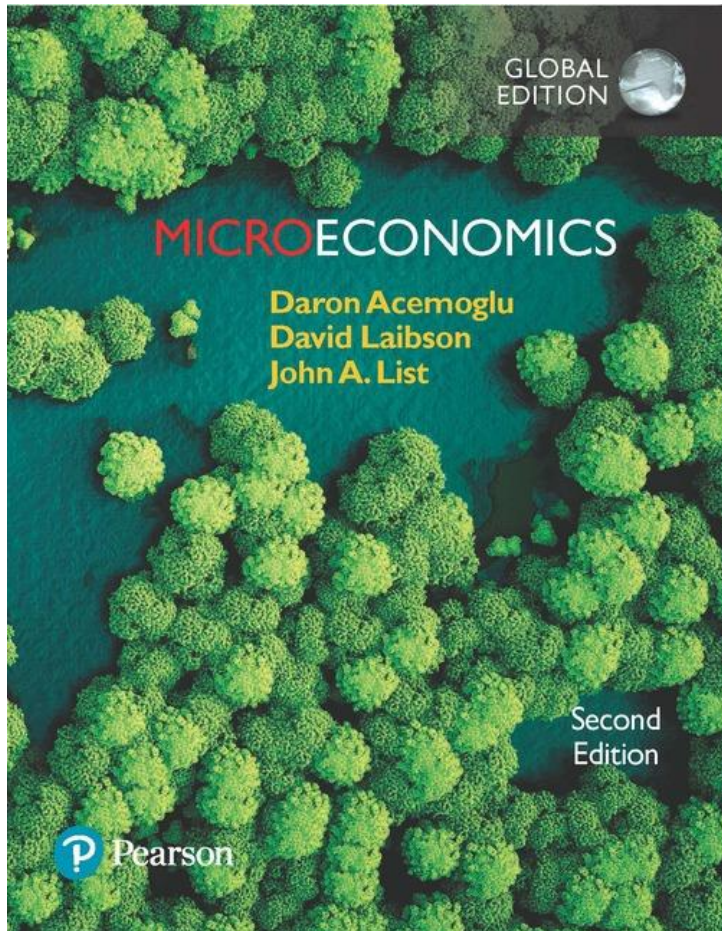# Microeconomics

Second Edition, Global Edition

Chapter 14
Oligopoly and Monopolistic Competition

Learning Objective

14.1 Two More Market Structures

14.2 Oligopoly

14.3 Monopolistic Competition

14.4 The "Broken" Invisible Hand

14.5 Summing Up: Four Market Structures

Key Ideas (1 of 2)

1. Two market structures that lie between perfect competition and monopoly are oligopoly and monopolistic competition.

2. In both of these markets the seller must recognize actions of competitors.

3. In oligopolies, economic profits in the long run can be positive.

Key Ideas

4. In monopolistically competitive markets, entry and exit drive economic profits to zero in the long run.

5. There are several important variables such as the number of firms in the industry, the degree of product differentiation, entry barrier, and the presence or absence of collusion that determine the competitiveness of a market.

Evidence-Based Economic Example:

How many firms are necessary to make a market competitive?

Two characteristics of markets:

1. The number of firms AND

2. The degree of product differentiation

Differentiated products

Goods that are similar but not identical

Homogeneous products

Goods that are identical, making them

perfect substitutes

Perfect
Competition
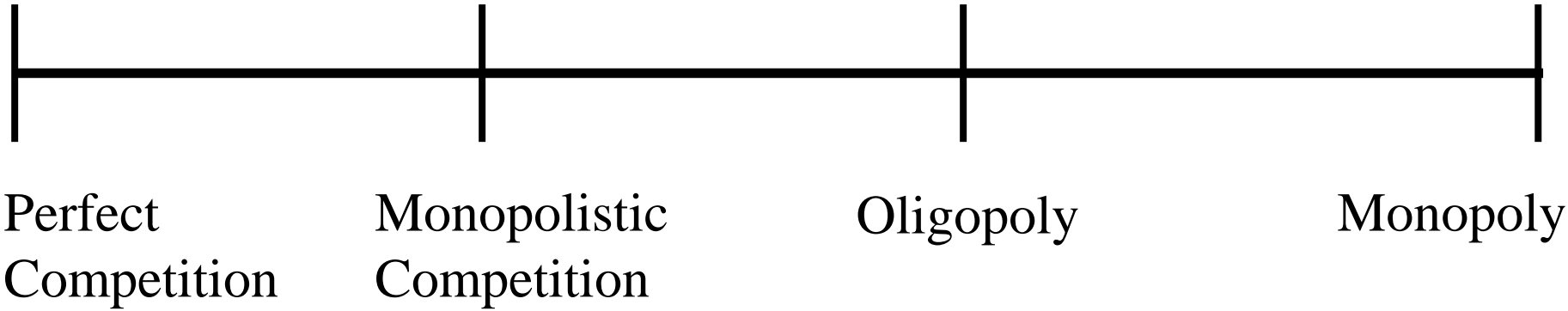
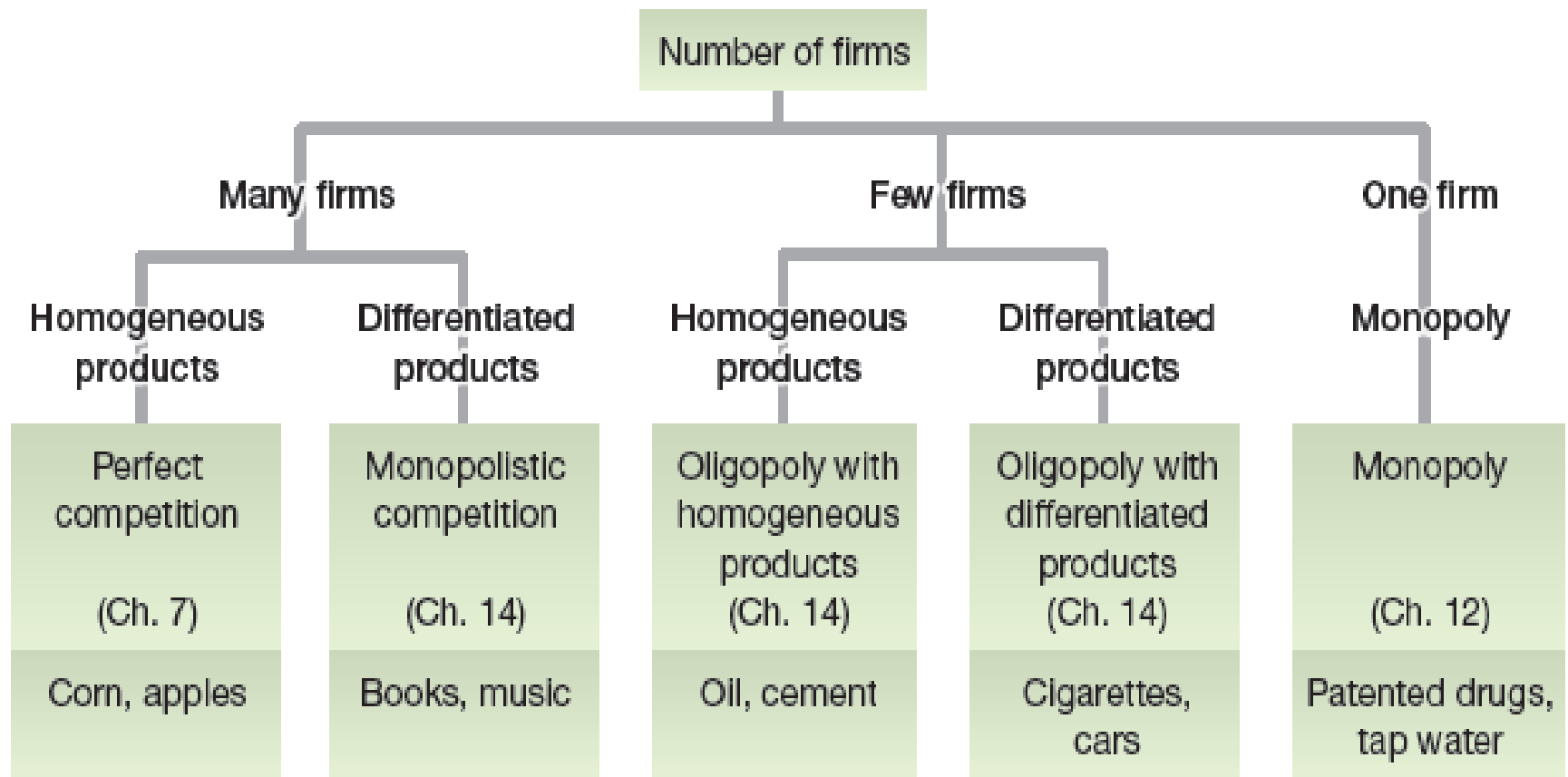Monopolistic
Competition

Oligopoly

Monopoly

Exhibit 14.1 Characteristics of Four Market Structures

Oligopoly:

- Market where there are only a few firms competing

- Products can be either homogeneous or differentiated

- Significant barriers to entry and exit

- Each firm's decisions are dependent upon other firms' actions

- Positive economic profits in the long run

Monopolistic competition:

- Many competing firms

- Products are similar but slightly differentiated

- No barriers to entry or exit

- Zero economic profits in the long run

Oligopolies can sell homogeneous or differentiated products.

Homogeneous products—examples:

- Steel

- Oil

- Gasoline

- Computer hard drives

Oligopolies can sell homogeneous or differentiated products.

Differentiated products—examples:

- Cereal

- Automobiles

- Laundry detergent

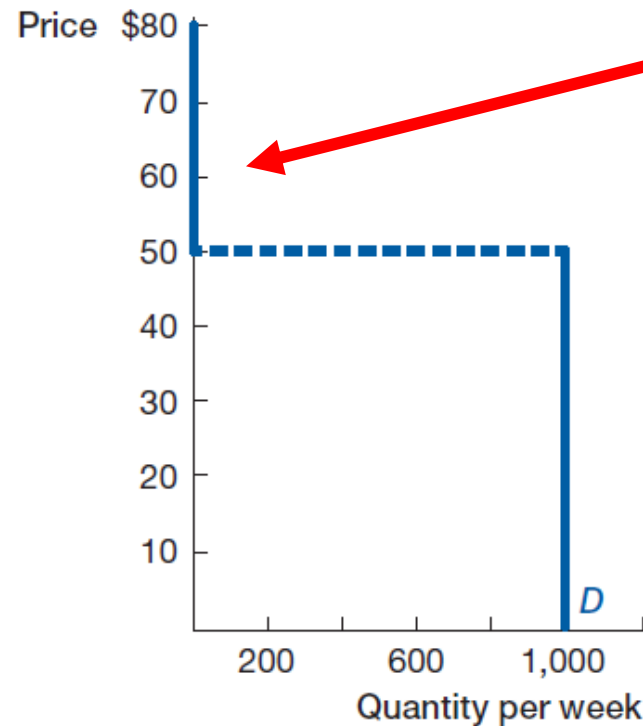- Cigarettes

Oligopolist's problem

1. Like a monopolist, has **significant barriers to entry**, resulting in long-run economic profits

2. High degree of interdependence between the few firms that occupy the market

Oligopoly with Homogeneous Products

- One of the simplest cases of oligopoly is an industry with only two competing firms—a **duopoly**.

- Suppose that these two firms compete against one another by setting prices—**Bertrand competition**.

- Suppose that the industry of interest is landscaping and that there are two firms: your company, Dogwood and a competitor, Rose Petal.

- Both companies have the same marginal cost which is 30 per landscape job.

- Consumers view services from two companies as identical. They will hire services from the company that sells at a lower price.

Exhibit 14.2 Market Demand Curve for an Oligopoly with Homogeneous Products

At any price above $50

There would be NO demand for the landscaping services IF the lower price firm could supply the entire market

In other words, if one of the two firms lowered price they would have all the demand (sales) in the market they could supply themselves

Dogwood is charging $50

Rose Petal is charging $45

Both have a MC of $30

Is this a Nash equilibrium?

NO! Dogwood has an incentive to change its behavior – to lower price

What should Dogwood do?

What should Rose Petal do?

What do we know about MC?

MC = $30 for these firms

Where does the madness end????

Long run equilibrium: P = MC

Does this look familiar?

How could oligopolists

avoid a price war?

Collusion

勾結

公平交易法: 聯合行為

Firms conspiring to set the

quantity or the market price

Problem 1: it's illegal

But what if it weren't illegal?

Could Rose Petal and Dogwood agree to charge $50, divide the market and each do 500 jobs?

Problem 2: prisoner's dilemma

Collusion is not illegal in some

other parts of the world.

Cartel

A formal organization of producers who

collude

OPEC

- Organization of the Petroleum Exporting Countries

- Comprised of oil-producing nations that collude to control the price of oil by limiting production

When can collusion work?

- If there is an **enforcement mechanism**

- If the long-run profits associated with not cheating outweigh the short-run gains of cheating (當囚犯困境不斷重複為無限期賽局時，可能可以跳脫困境)

買貴退差價

Why do firms say they will match a competitor's price?

Oligopoly with Differentiated Products

Because products are **differentiated**, the demand function is not all-or-nothing.

Firms can charge higher prices and not lose all sales because the **differentiation creates preferences** on the part of consumers.

Residual demand

The demand not met by the other firm(s) and dependent on the prices of all the firms in the industry

Example: Coke and Pepsi

If Coke raises its price, it will lose sales to Pepsi, but Coke's sales won't go to zero (unlike sales of homogeneous products) because of differentiation. Some consumers would still rather have Coke, for example.

How should Coke and Pepsi decide on their prices?

- Each firm must predict how its prices will affect the prices of its competitor.

- In Nash equilibrium, both firms set their prices as best

- responses to each other.

- In a oligopoly with differentiated products, firms typically make positive economic profits, and some oligopolists persist in the long run with positive profits because of barriers (such as established brands) to entry.

- What happens if there is a third firm supplying soda to the market?

- Price will typically be lower with three firms competing compared to two firms competing.

- As the number of firms in an oligopolistic market increases further, prices tend to decline toward marginal cost.

- If enough entry occurs, it could cause the market to turn into a monopolistically competitive structure.
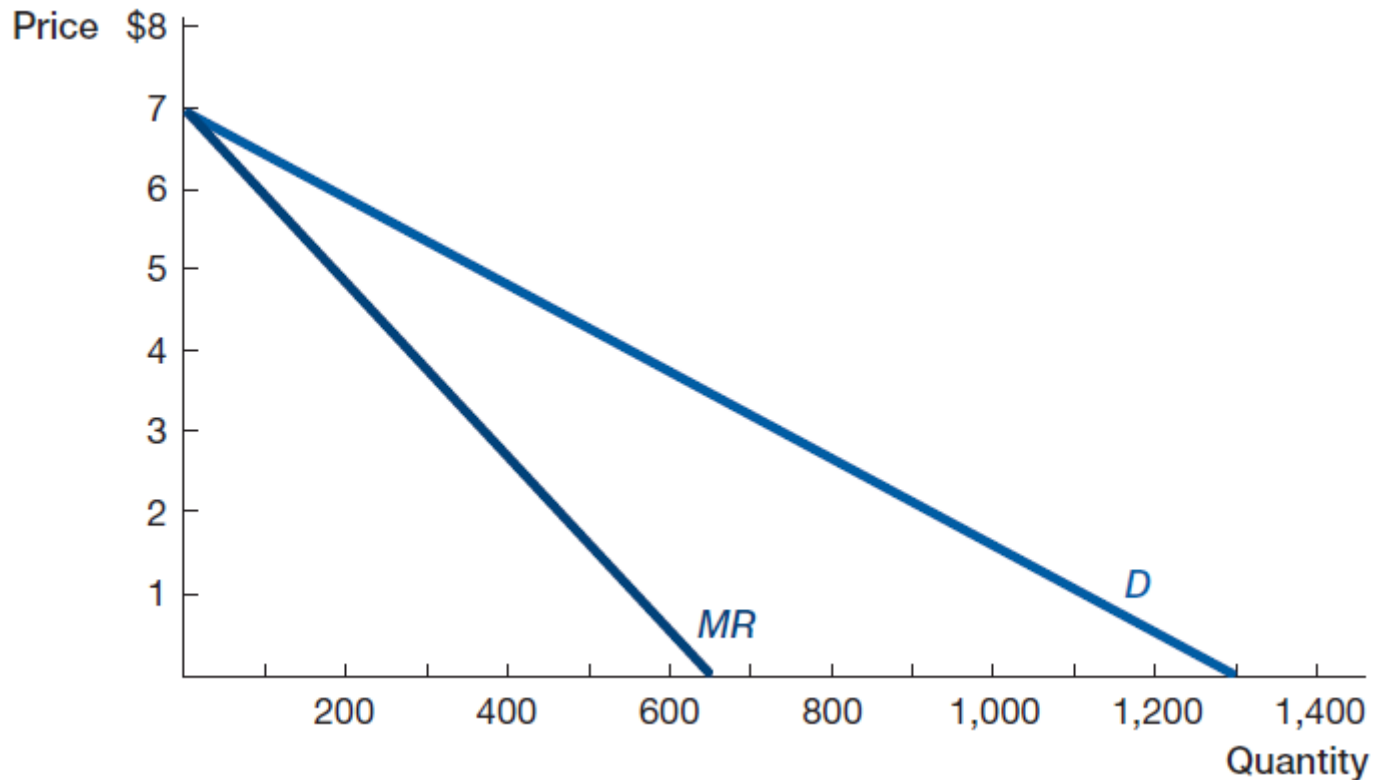
Monopolistic Competition

- 很多家廠商

- 但是每個廠商的產品有些差異
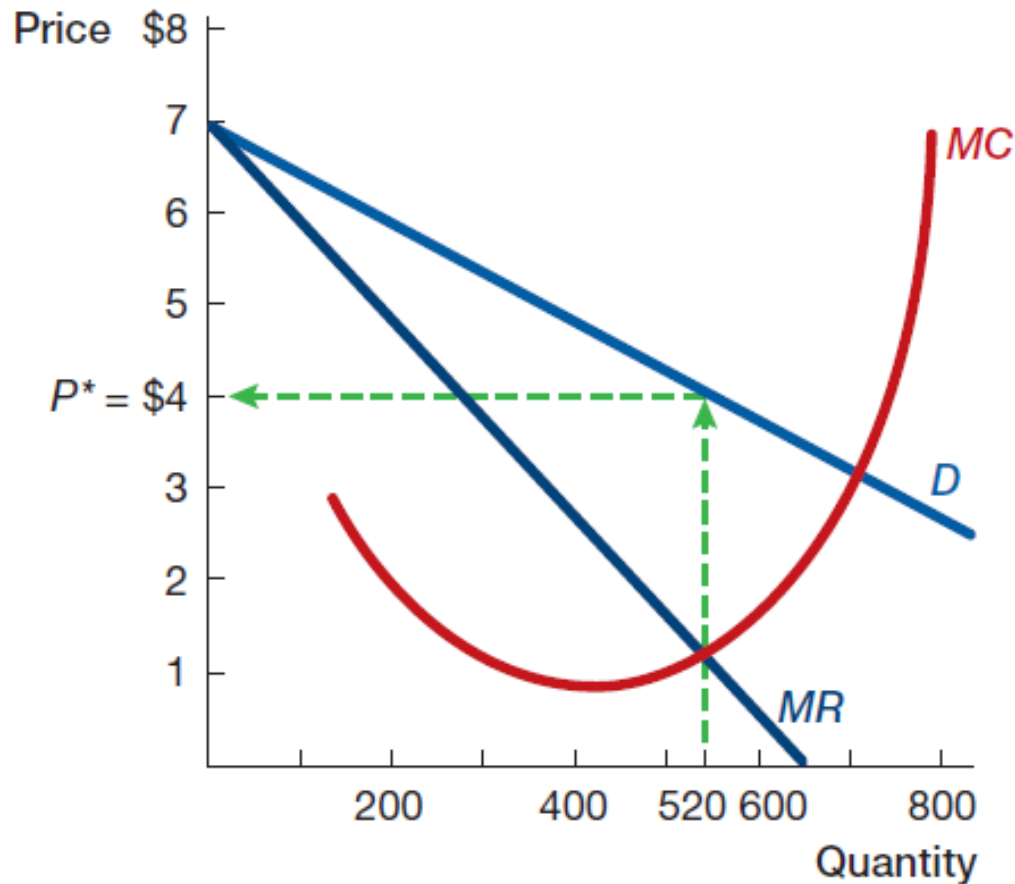
- 例子: 衣服

- 　　　餐廳

- 　　　食品加工/調味料

Monopolistic Competition

- 個別廠商都有一些Market Power, 決策如同 Monopoly 一樣: MR=MC

- 因為只要有利可圖,就會有店家進入,因此最後利潤不會是正的 (但畢竟不是完全競爭,商家隨時都在找賺錢的方式)

- MR=MC ; P>MC : 類似單一價格的Monopoly 情況: 生產的數量並非社會最適

Pearson
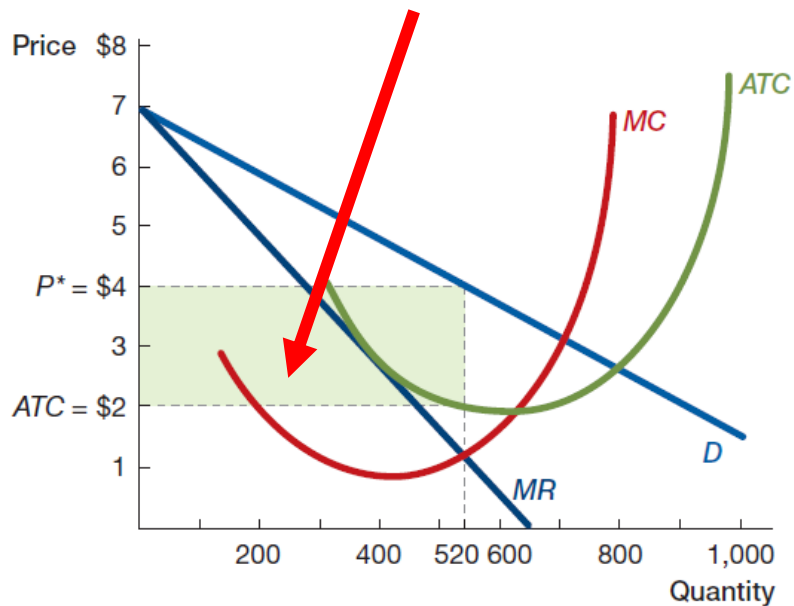
Dairy Queen's Demand Curve and Marginal Revenue Curve

Optimal Pricing Strategy for a Monopolistic Competitor
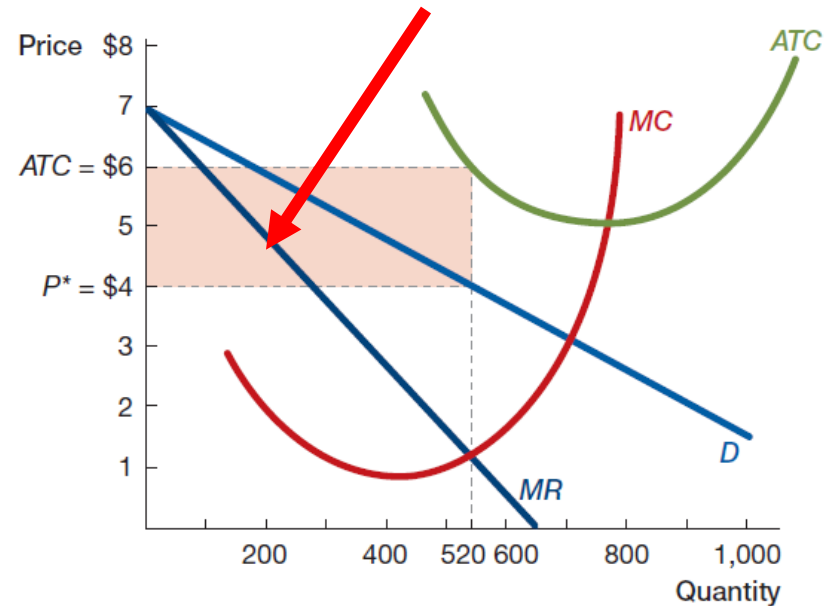
Economic Profits and Economic Losses (差異: 固定成本高則ATC高)
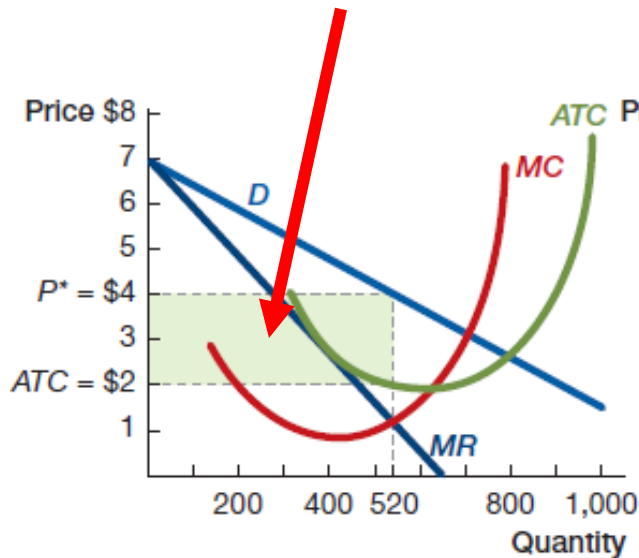
Price is higher than ATC

Economic Profits

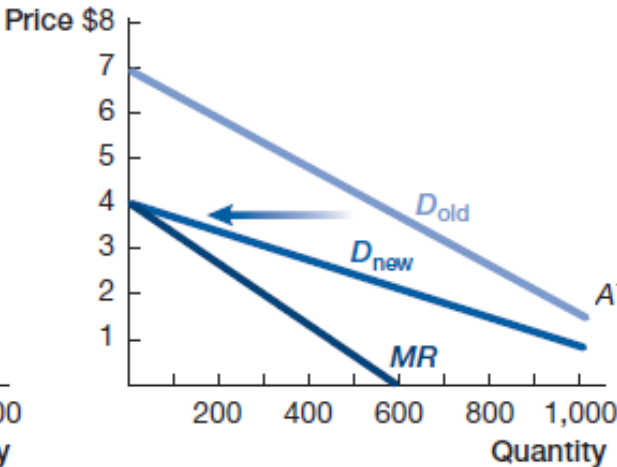Price is lower than ATC

Economic Losses

(a) Economic Profits

(b) Economic Losses
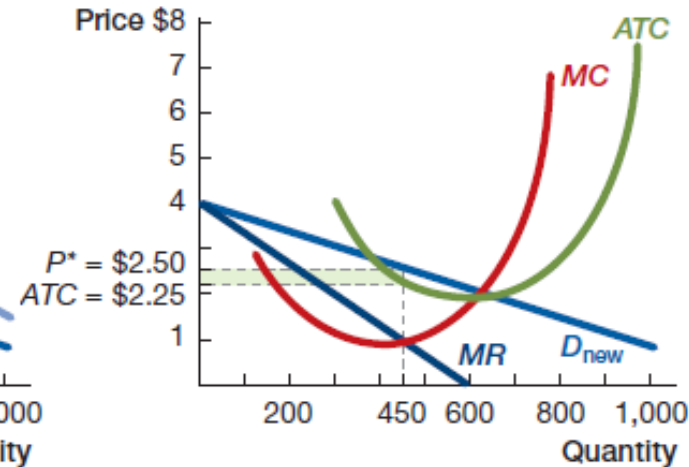
The Effect of Market Entry on an Existing Firm's Demand Curve

Economic Profits

New Firms – increases competition
Decreases demand for our firm

Eventually erodes economic profits

(a) Economic Profits

(b) Entry Occurs

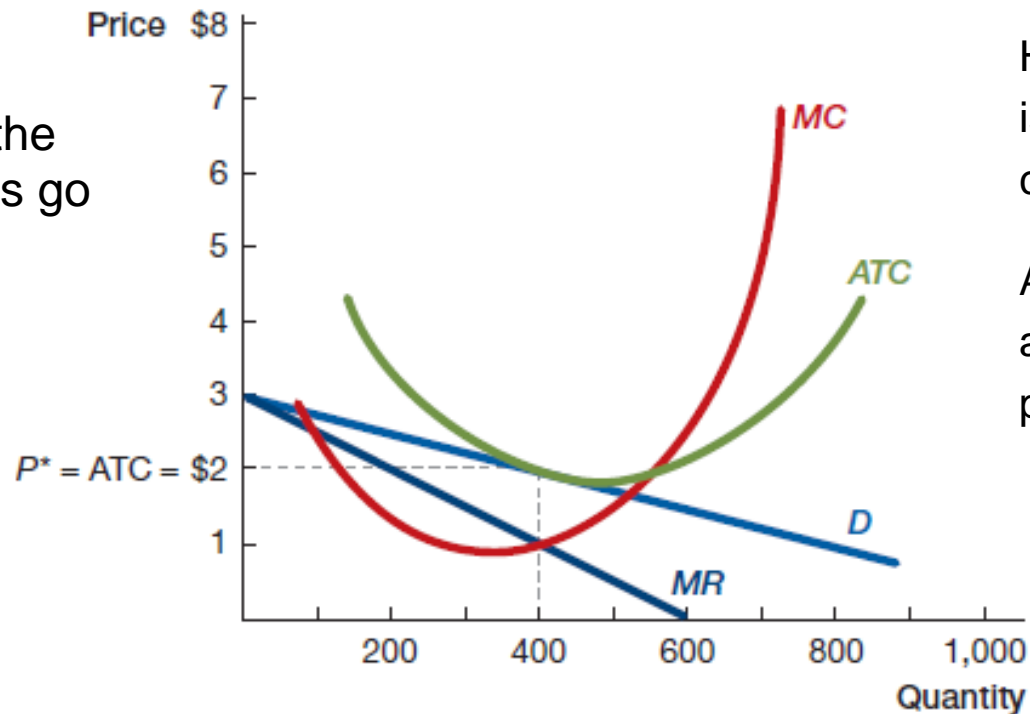(c) Economic Profits Decrease

The Bottom Line: Free Entry and Exit (No Barriers) Eliminate the Economic Profits in the Long-Run

Zero Profits in Long-Run Equilibrium

Firms will stop entering when the economic profits go away

when P = ATC

Firms are always trying to **differentiate products** with advertising, branding, etc.

Highly competitive is NOT perfectly competitive!

Always looking for an edge (economic profits)

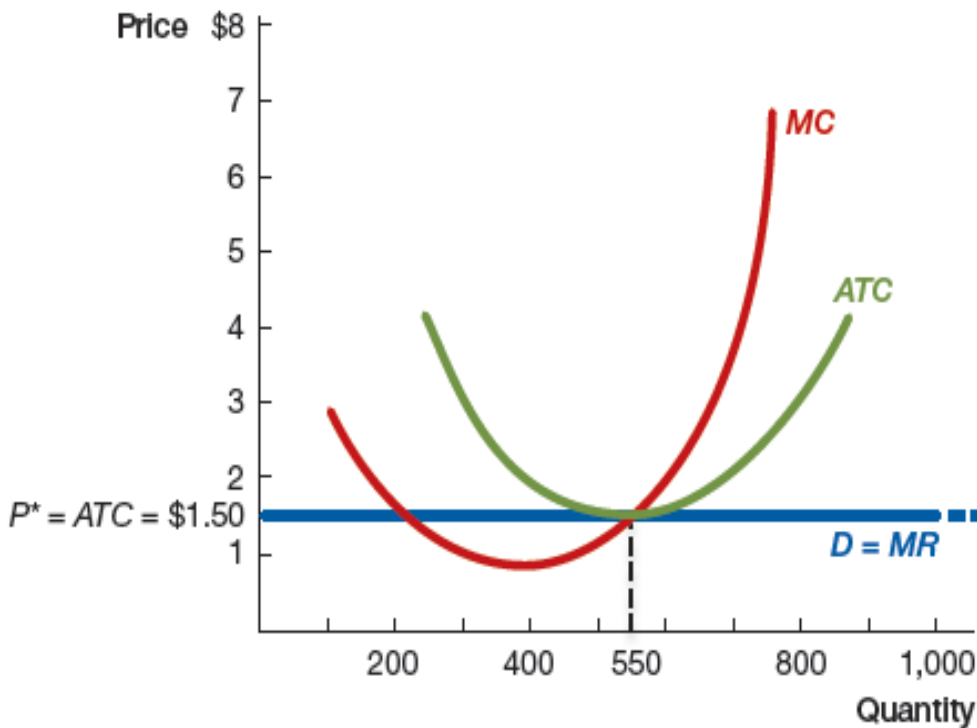# Monopolistic Competition

效率分析

- MR=MC；P>MC：

類似單一價格的Monopoly 情況:
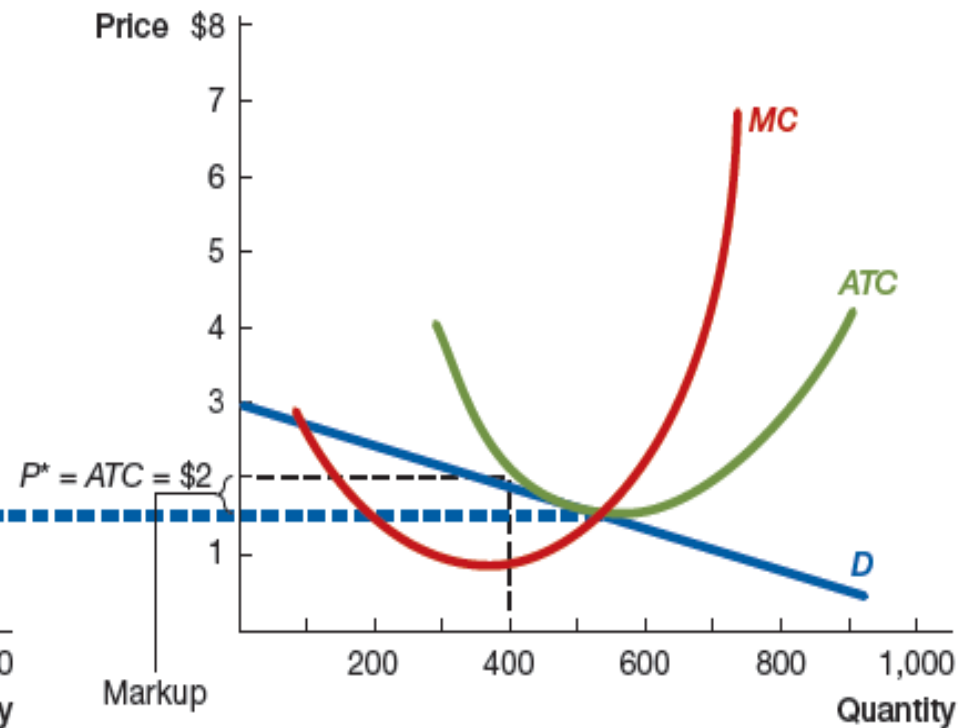
市場價格比完全競爭市場高，

生產的數量並非社會最適

但消費者享受商品多樣性

Equilibria for a Perfectly Competitive Market and a Monopolistically Competitive Market

(a) Perfectly Competitive Equilibrium

Price $8

MC

ATC

$P^* = ATC = \$1.50$

$D = MR$

200 400 550 800 1,000 Quantity

(b) Monopolistic Competition Equilibrium

Price $8

MC

ATC

$P^* = ATC = \$2$

Markup

D

200 400 600 800 1,000 Quantity

Should the government regulate, in the case of market power?

It depends. It might if

- There is suspected collusion

- The benefits exceed the costs

- The industry is too concentrated

Herfindahl-Hirschman Index

measure of market concentration to determine

degree of competition

HHI is sum of square of market share of each firm.

- Ex: 50%, 30% , 20%,HHI=$(0.5^2 + 0.3^2 + 0.2^2)$

Herfindahl-Hirschman Index

HHI is sum of square of market share of each firm.

- Ex: 50%, 30% , 20%,HHI=$(0.5^2 + 0.3^2 + 0.2^2)$

- 美國司法部2010規定:

HHI<0.15　　非集中市場

0.15< HHI< 0.25　中度集中市場

HHI >0.25　高度集中市場。

據此指標 台灣金控整體與銀行HHI<0.15，證券業則為中度集中市場，人壽保險業接近高度集中市場。

	Perfect Competition	Monopolistic Competition	Oligopoly	Monopoly
Number of Firms	Many	Many	A few	One
Type of Product/ Service Sold	Identical (homogeneous)	Slightly differentiated	Identical or differentiated	One product
Barriers to Entry	None; free entry and exit	None; free entry and exit	Yes	Yes; high
Price-Taker or Price-Maker?	Price-taker; price given by the market	Price-maker; with a recognition of other sellers	Price-maker; with a strong recognition of other sellers	Price-maker; no competitors, no perfect substitutes
Price	$P = MR = MC$	Set $P > MR = MC$	Set $P > MR = MC$, or $P = MR = MC$, depending on type of competition and product differentiation	Set $P > MR = MC$
Social Surplus	Maximized	Not maximized, but society might benefit from product diversity	Not maximized	Not maximized, but sometimes society benefits from R&D
Long-run Profits	Zero	Zero	Zero or more than zero	More than zero

Evidence-Based Economic Example:

How many firms are necessary to make a market competitive?

Research indicates some local markets can be competitive with 3 or 4 firms (varies by industry)