

UWTSD MBA (Nov 2018 intake)
SBMA7133 Managerial Economics

(4-1)

Four Major Types of Market Structure

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3 February 2019; 10:00 am to 1:30 pm

Lecture Agenda:

- Market Structure
- Measures of Market Concentration
- Perfect competition
- Monopoly
- Monopolistic competition
- Oligopoly

Market Structure

https://www.youtube.com/watch?v=LYEdYak_xyw

Perfect
Competition

Pure
Monopoly



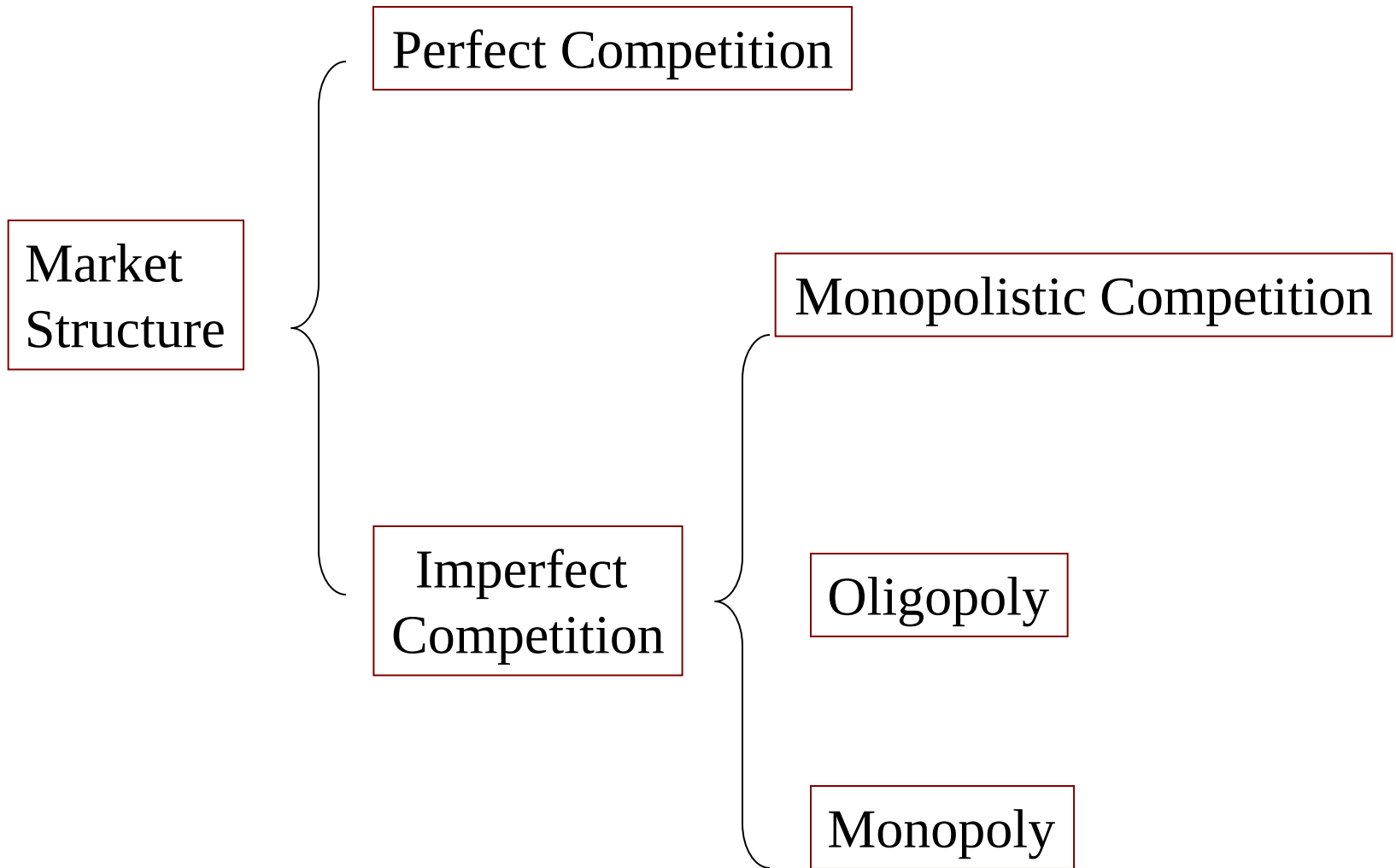
More competitive means fewer imperfections

Perfect
Competition

Pure
Monopoly

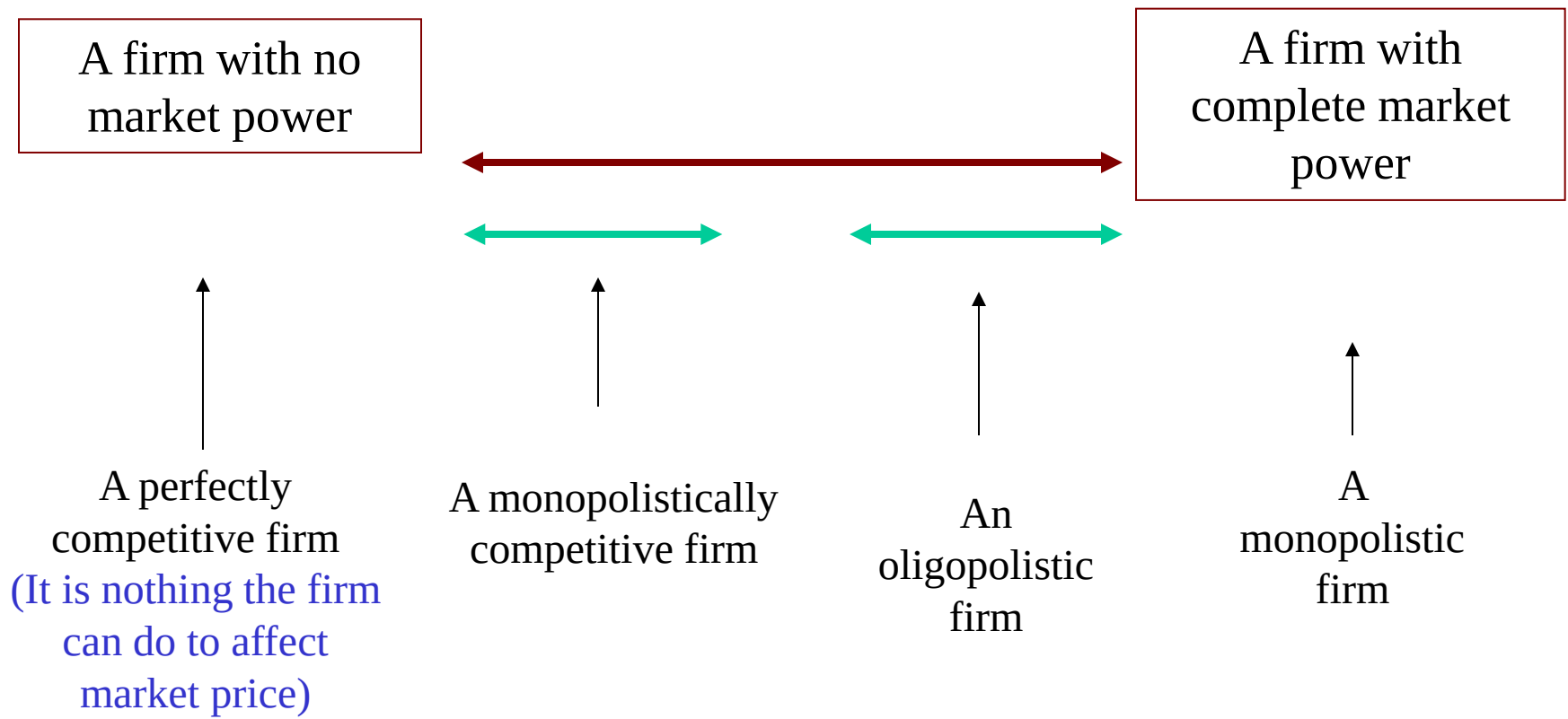


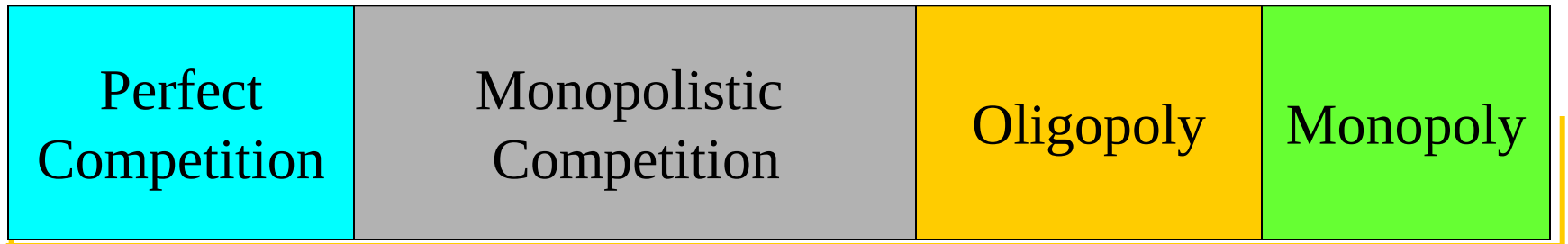
Less competitive means greater degree of imperfection



Firms with market power

Market power is the ability to control the market price.





The further right on the scale, the greater the degree of monopoly power exercised by the firm.

Measures of Market Concentration

- The market/industry concentration ratio is a ratio that indicates the sales value of individual firms in relation to their industry as a whole.
- Low concentration ratio in an industry would indicate greater competition among the firms in that industry, compared to one with a ratio nearing 100%, which would be evident in an industry characterized by a true monopoly.

(1) The 4 largest firms Concentration ratio

The n firms concentration ratio is the sales (or other indicators of the production scale) added across the n largest firms in an industry divided by the total industry sales (expressed in percentage terms). For example, CR_4 is the sales of the 4 largest firms added together divided by total sales in the industry.

Examples

(1) Monopoly industry: $CR_4 = 100\%$

(2) An industry with 4 firms of equal size (25% of sales for each):
 $CR_4 = 100\%$



Can you get the whole picture of the market concentration by just looking at the CR4?

More examples:

(3) An industry with 10 firms, each with 10% of market share : $CR4 = 40\%$

(4) An industry with 4 firms, each with 10%, and 30 firms, each with 2% :

$$CR4 = 40\%$$

Here we have two examples of industries where the $CR4$ is the same. But we see the remaining firms after the top 4 are very different in each example. So, another measure has been added and the measure considers all the firms in an industry. The measure is the HHI .

(2) Herfindahl—Hirschman Index – HHI

Suppose firm i 's share of the total market output is $w_i = \frac{S_i}{S_T}$, where S_i is firm i 's sales and S_T is total sales in the industry. Then the Herfindahl-Hirschman index is:

$$HHI = 10000 \times \sum w_i^2$$

The closer the HHI is to 10,000 the more the industry is like a monopoly; the closer to 0 the more the industry is like a perfectly competitive industry.

Examples:

- a) Monopoly: $\text{HHI} = 100^2 = 10,000$. This is as big as you can get.
- b) 4 firms with 25% each: $\text{HHI} = 25^2 + 25^2 + 25^2 + 25^2 = 2500$
- c) 10 firms each with 10%: $\text{HHI} = 10 \text{ times } 10^2 = 1000$.
- d) 4 firms with 10%, 30 firms with 2% : $\text{HHI} = 4 \text{ times } 10^2 \text{ plus } 30 \text{ times } 2^2$
 $= 400 + 120 = 520$.

The Gini index

- It is an advanced method of measuring the degree of dispersion or concentration of a variable.
- the Gini coefficient can theoretically range from 0 (complete concentration) to 1 (complete dispersion)

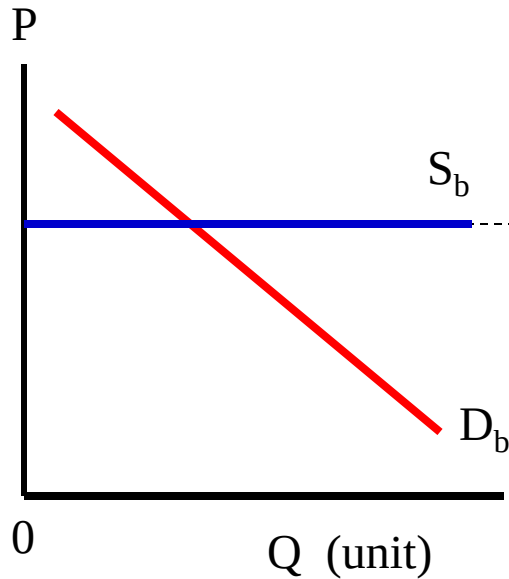
Perfect Competition

Characteristics

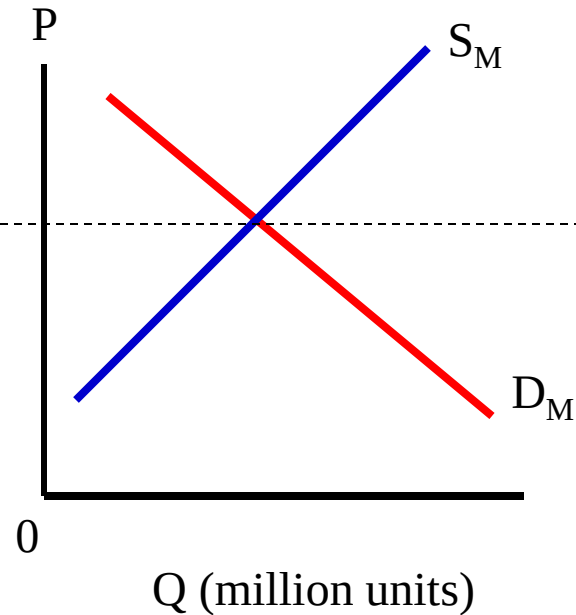
Basic features	Connotation
1. Firms are price takers	Many buyers and sellers in the market; products are homogeneous; perfect market information; free mobility of production factors; no transaction costs; no price discrimination, firms have no control over the price they charge for their product; firms may earn economic profits or losses in the short run; but in the long run, entry or exit forces profits to zero.
2. Free entry and exit	Market access is very easy.

Price setting in a perfectly competitive market

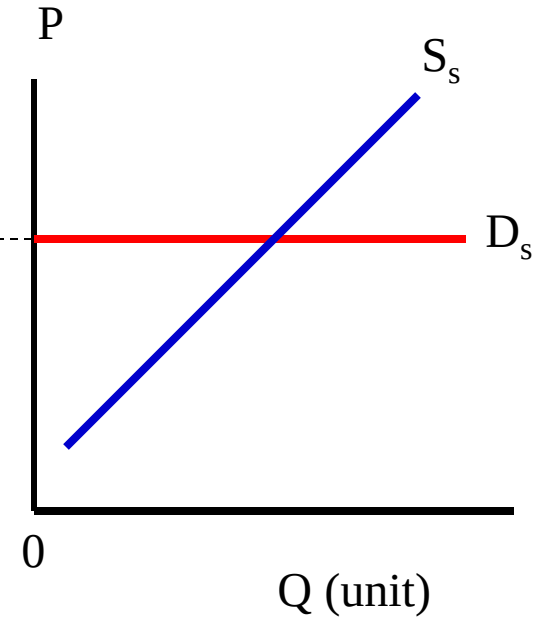
An Individual Buyer



The market



An Individual Seller



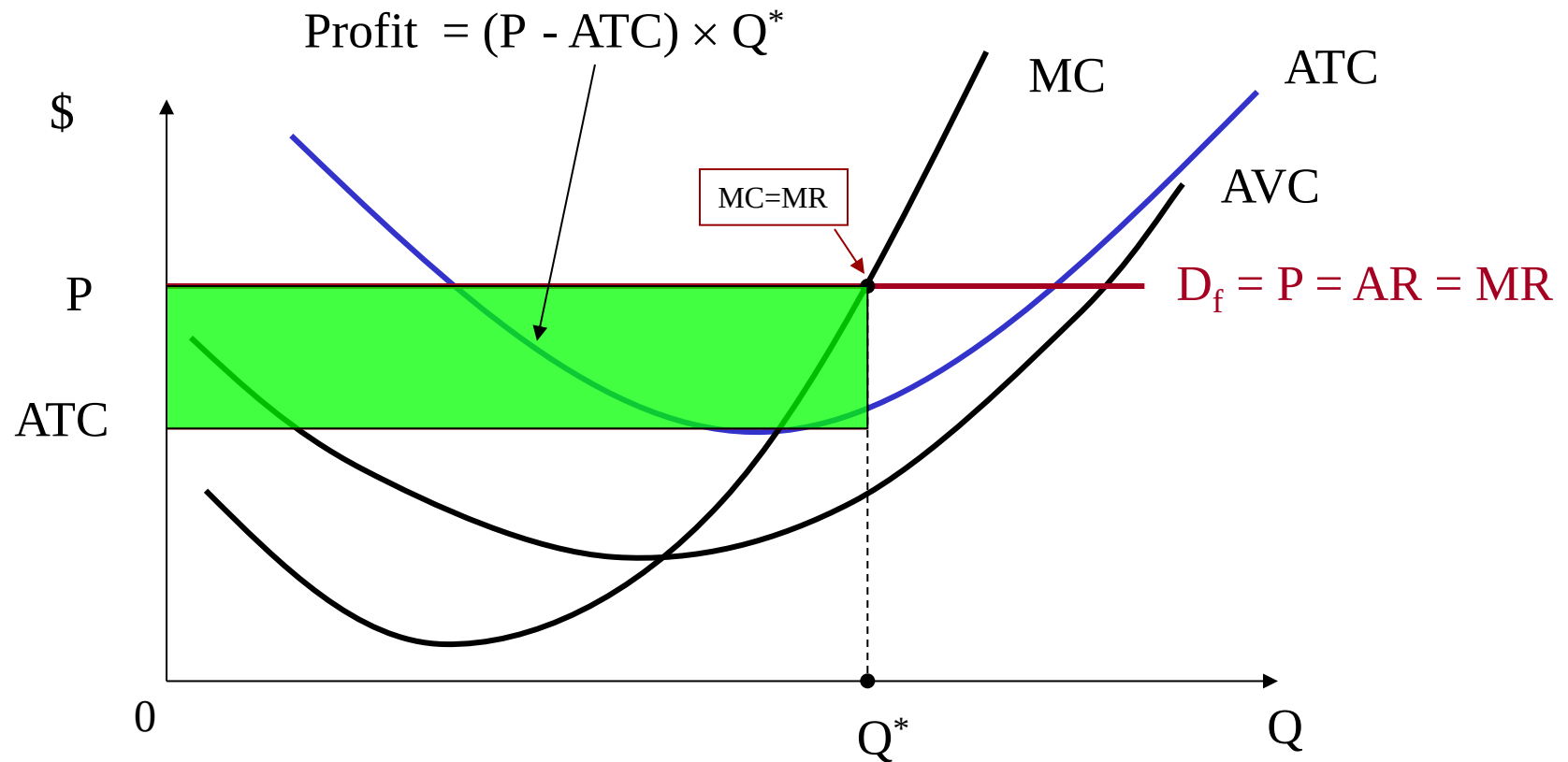
Profit-Maximizing Output Decision

The condition for producer equilibrium in the product market is
 $MC = MR$

Since $MR = P = AR$ in a perfectly competitive market,

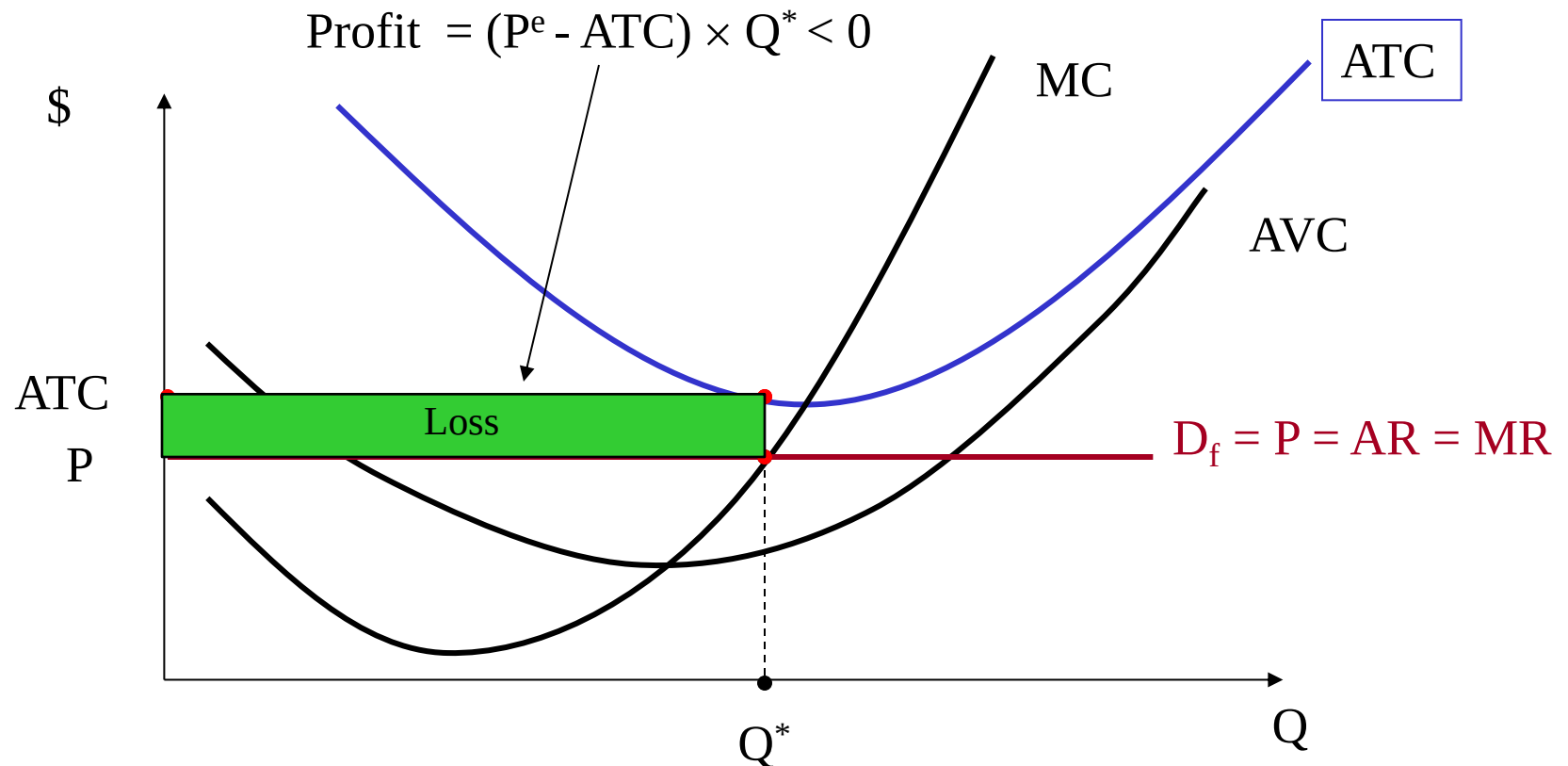
$P = MC$ determine the firm's most profitable output level

Representative Firm's Output Decision



D_f 代 represents the individual firm demand

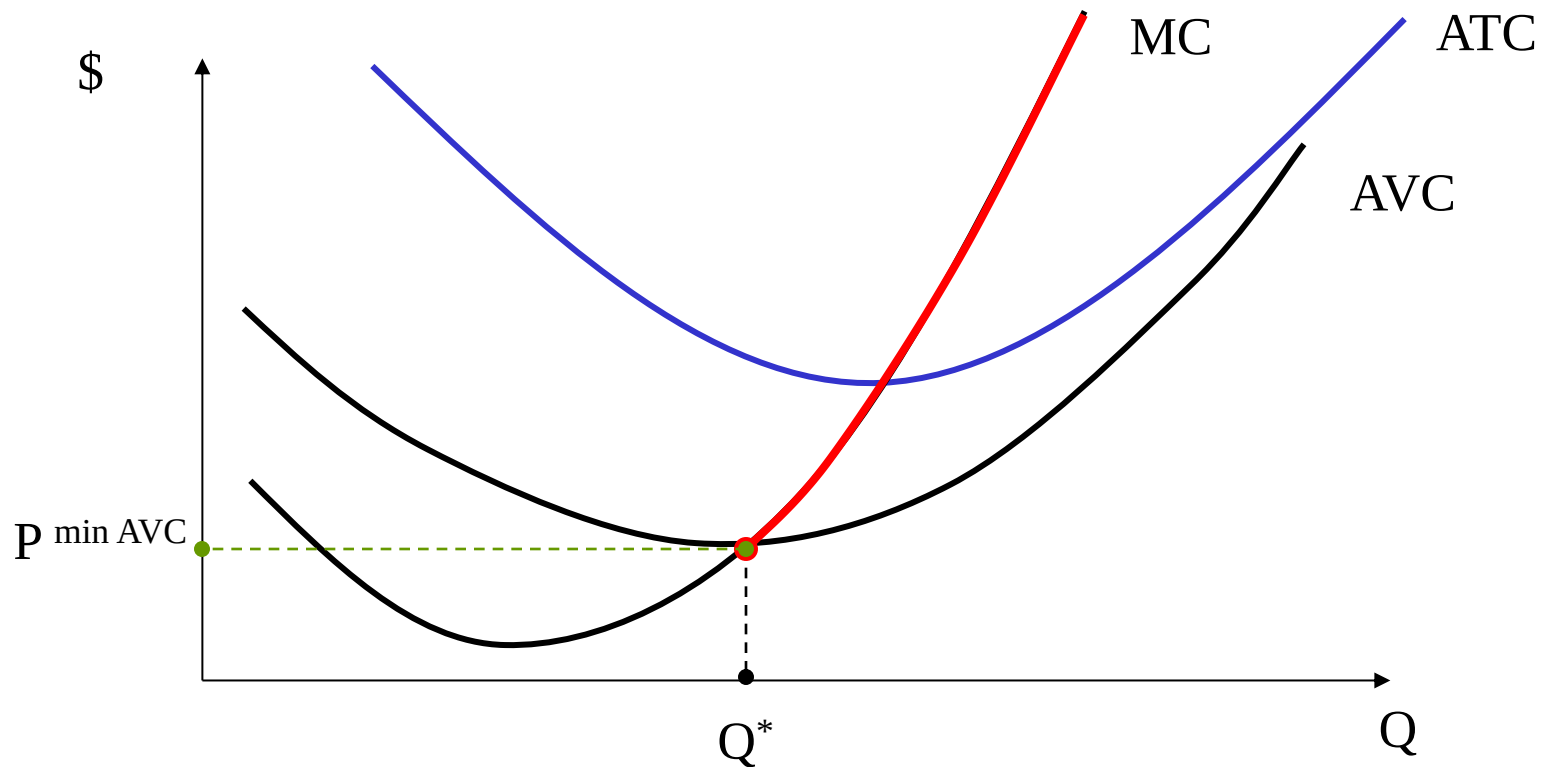
Should this Firm Sustain Short Run Losses or Shut Down?



Shutdown Decision Rule

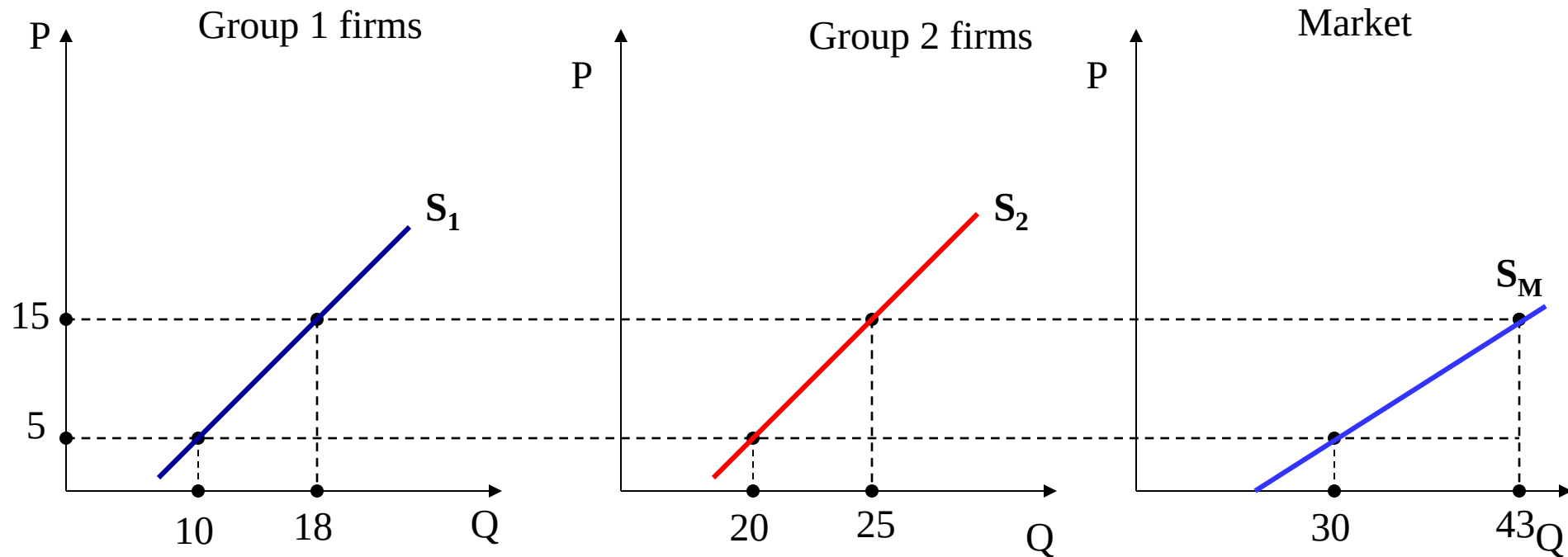
- A firm should shutdown when $P < \min AVC$.
- A firm should continue operating as long as $P \geq \min AVC$
- Thus, a perfectly competitive firm's supply curve is that portion of its marginal cost curve that lies above the minimum of the average variable cost curve.

Firm's Short-Run Supply Curve: MC above min AVC



Short-Run Market Supply Curve

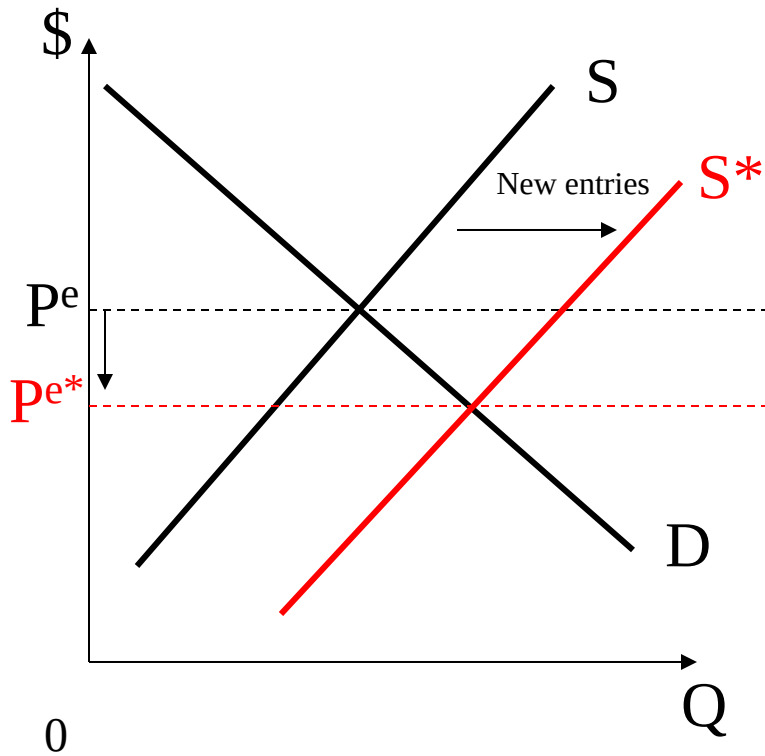
The market supply curve is the summation of each individual firm's supply at each price.



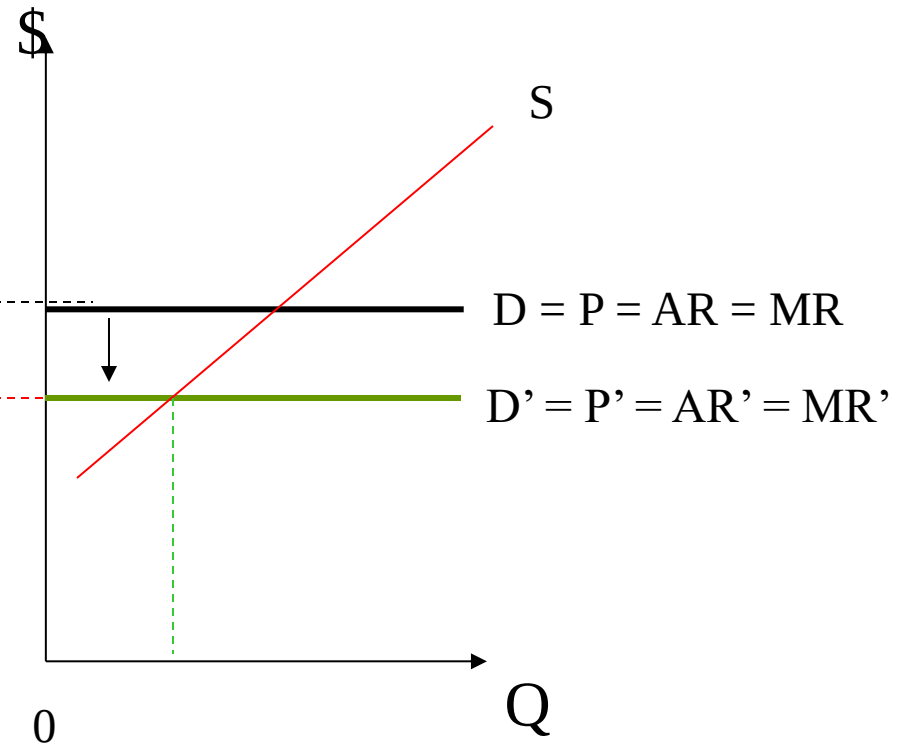
(In million units)

The effect of market entry on price

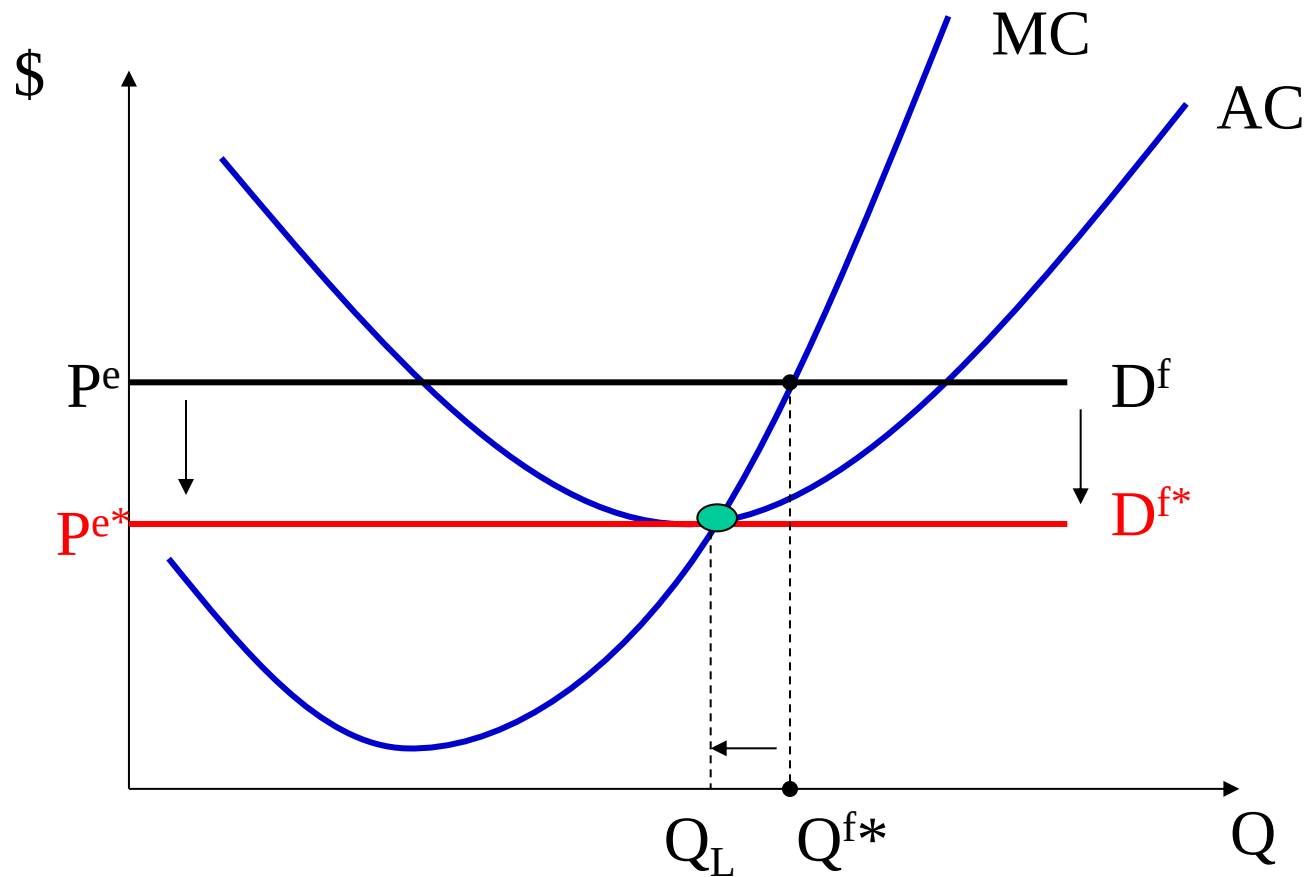
Market



Firm

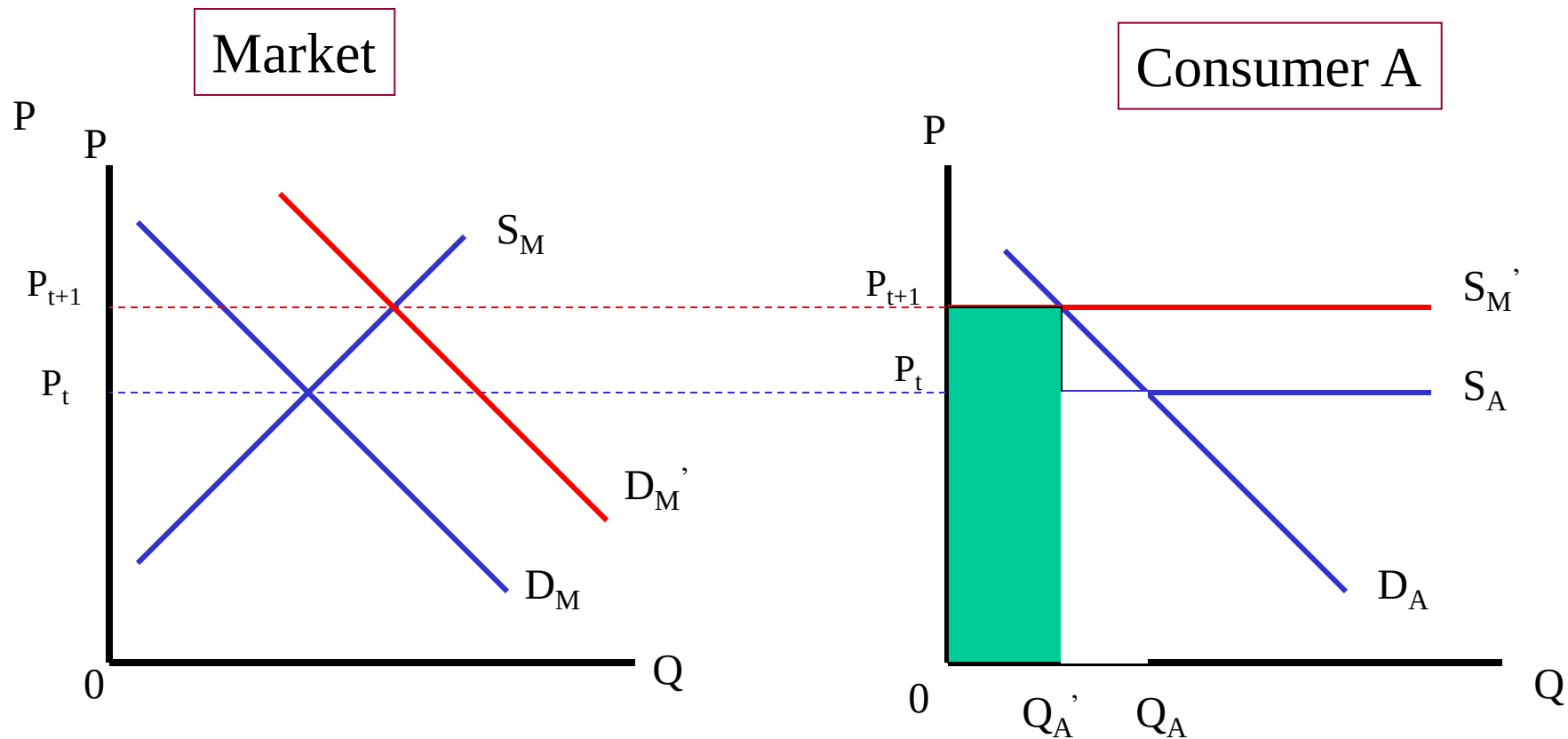


Effect of Entry on the Firm's Output and Profits

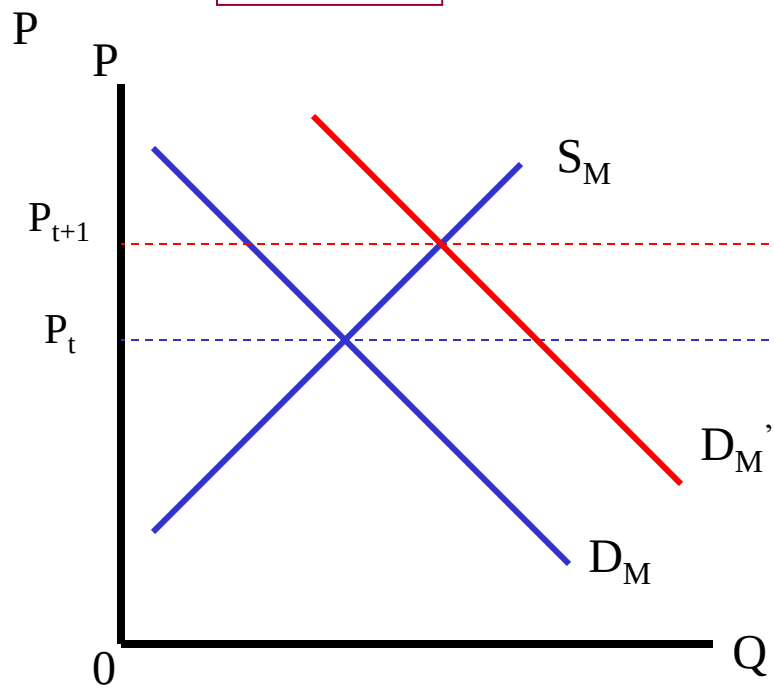


- Short run profits leads to market entry.
- Entry increases market supply, drives down the market price, increases the market quantity.
- Demand for individual firm's product shifts down.
- Firm reduces output to maximize profit.
- Long run economic profits are zero (The firm earns a normal profit in the long run).

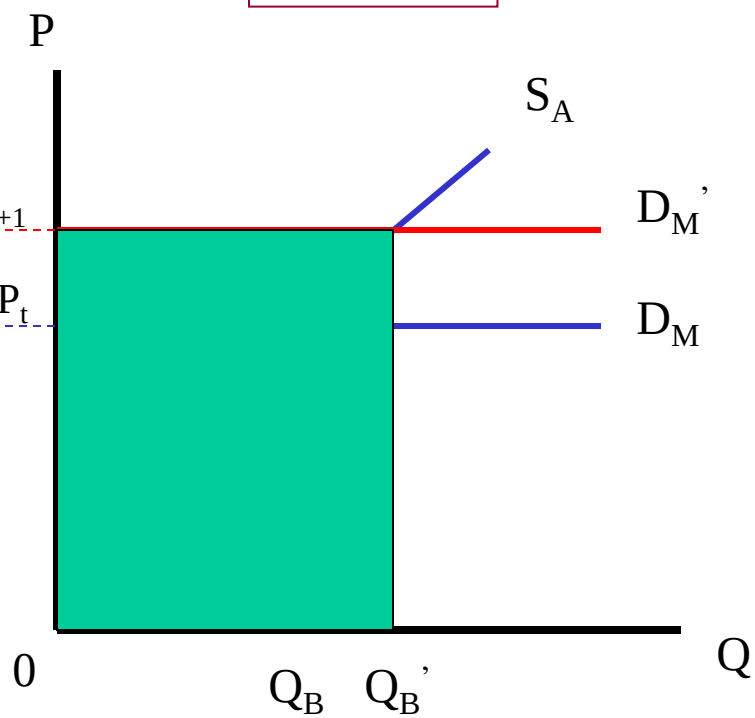
An individual consumer's total expenditure



Market



Seller B



Monopoly

Characteristics

Basic features	Connotation
1. Firms are price makers	The firm is the sole producer of a product for which there are no close substitutes; the demand for the firm's product is the market demand curve ; the firm has considerable control over price since it controls the total quantity supplied.
1. No market entry	Barriers to entry exist because there is no immediate competition. A monopoly firm can earn persistent economic profits provided that source of monopoly power is not eliminated.

Barriers to entry

- Economies of scale
- Legal barriers
- Ownership or control of essential resources
- Pricing and other strategic barriers

斷的起源 Origins of monopoly

- Geographical & traditional factors
(Because the monopoly owns the key raw material and/or production technology.)
- Natural monopoly
(it is a result of market competition because of economies of scale.)
- Artificial monopoly
(Through amalgamation, nationalization, collusion, merger/takeover, acquiring patent, exclusive contracts, or other legal barriers.)

A monopolistic firm's average revenue and marginal revenue curves

The monopolist's demand curve is the market demand curve:

$$D_M = D = AR$$

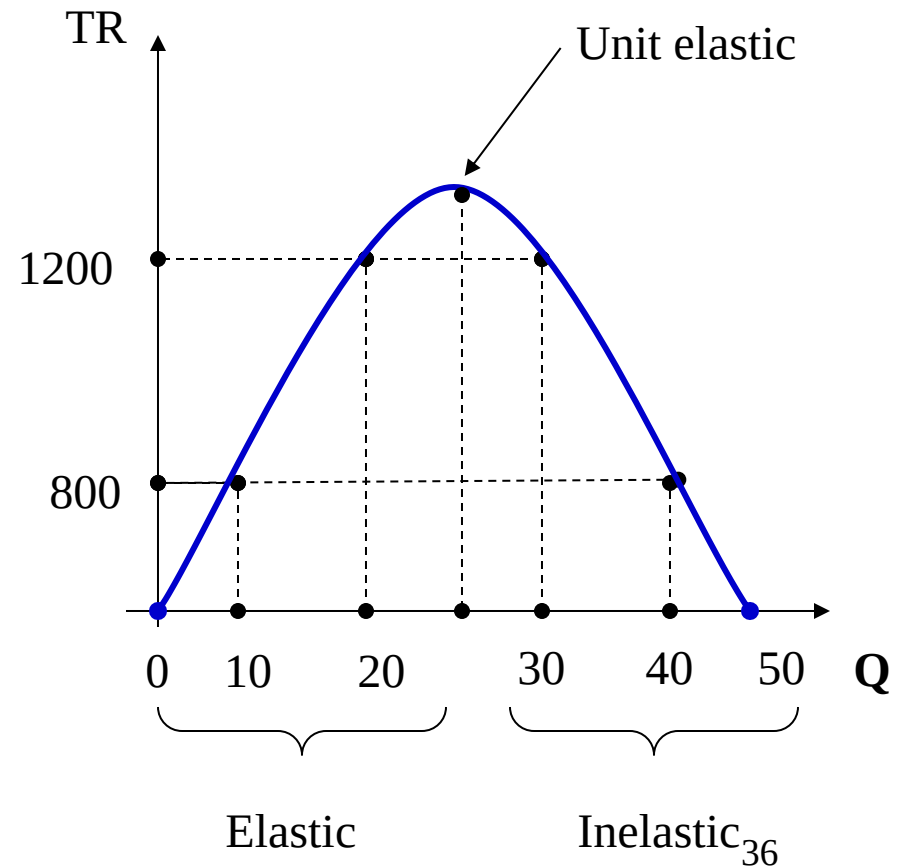
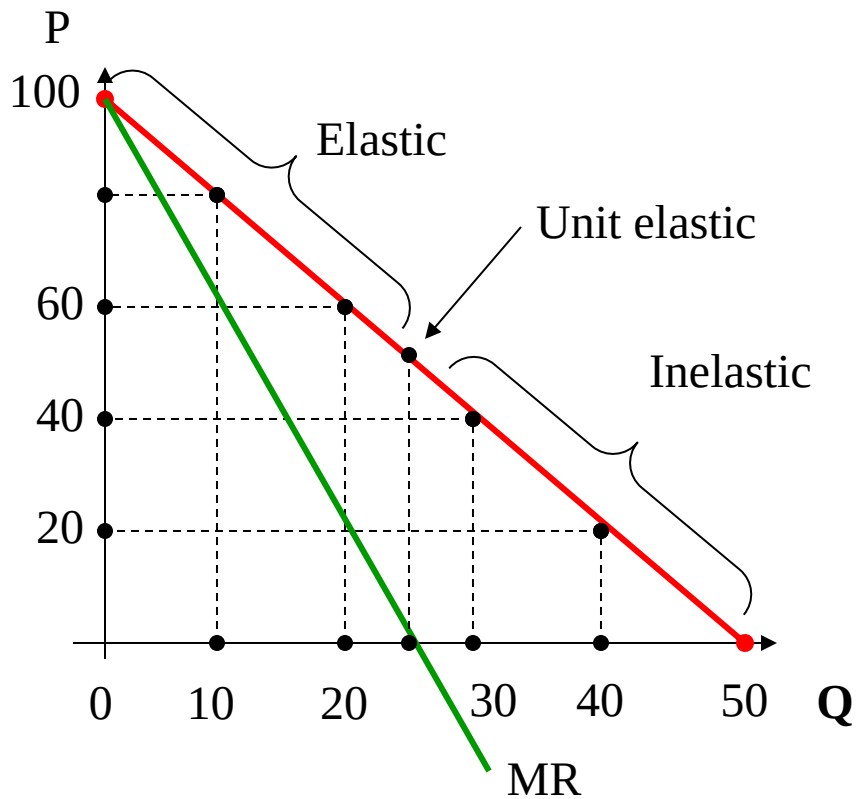
If the monopolist's average revenue curve is linear :

$$AR = P_0 - bQ$$

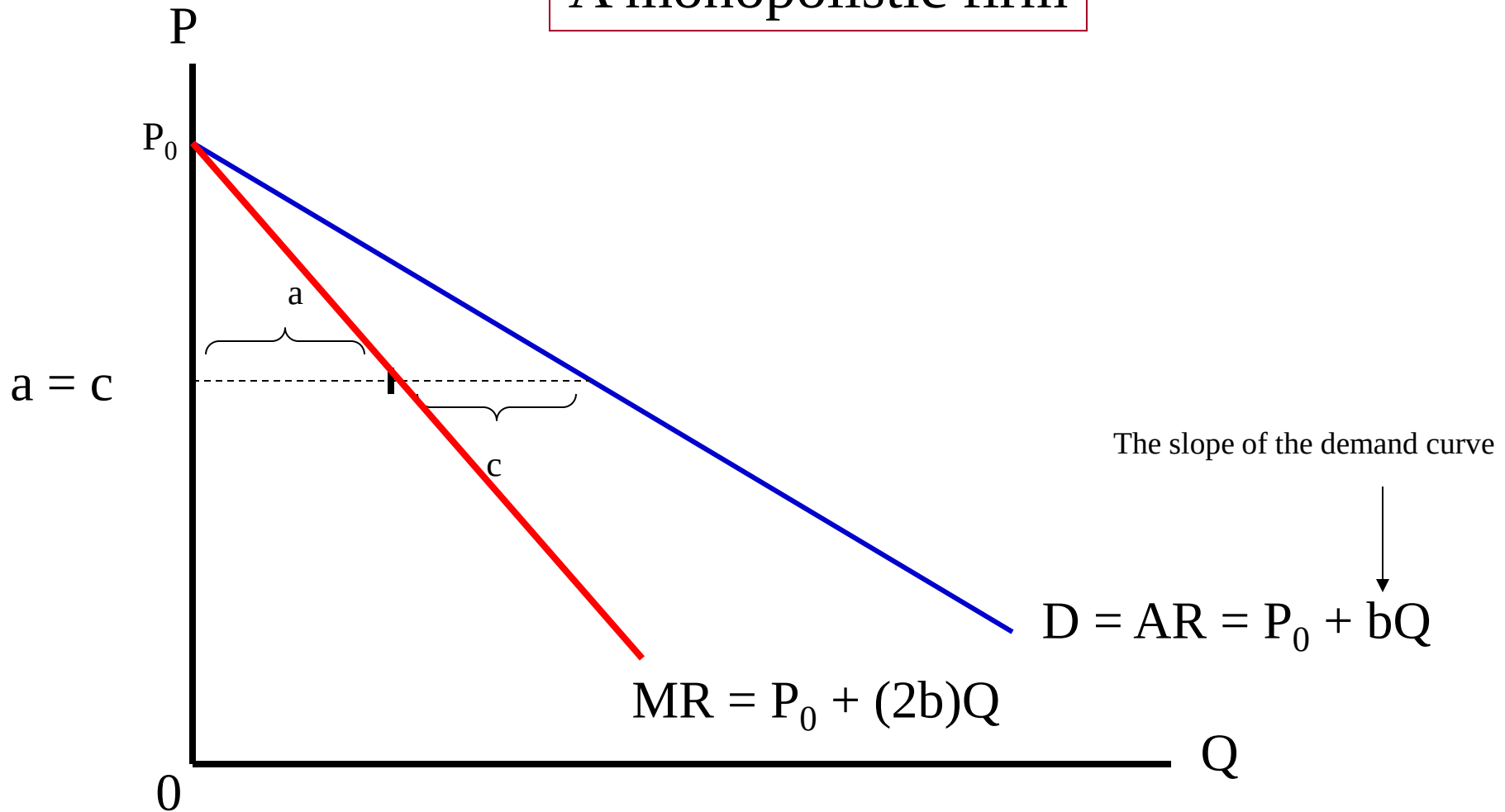
then his linear marginal revenue curve is :

$$MR = P_0 - (2b)Q$$

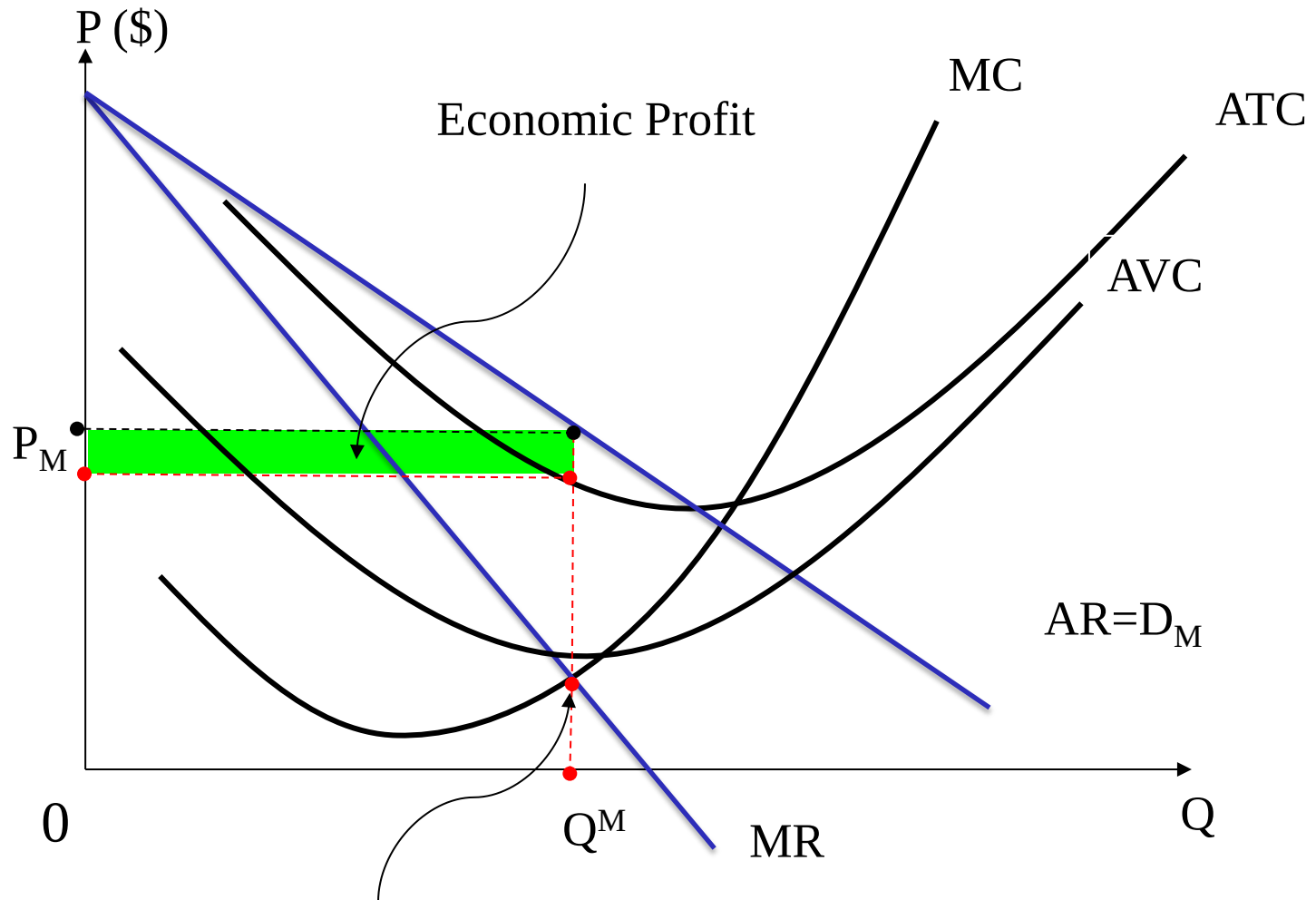
A Monopolist's Marginal Revenue



A monopolistic firm



A monopolistic firm's profit-maximizing output decision



Produce at where $MR = MC$.

Charge the price on the demand curve that corresponds to that quantity.



True false question

Higher lending rates and lower deposit rates would be more favorable for a commercial bank.

Monopolistic Competition

Monopolistic competition refers to a market or an industry in which many firms sell a product that is similar but not identical. It lies between extremes of Perfect Competition and Monopoly.

Characteristics

Basic features	Connotation
1. Product differentiation	Many buyers and sellers in the market; firm has some control over price because of the differentiation of their product; and firms earn a profit slightly above the normal profit.
1. Free entry and exit	Relatively free entry and exit into and out of the market.

Examples

Movies

Computer Games

Chinese Restaurants

Private tuition

Furniture

Market stalls

Oligopoly

Characteristics

Basic features	Connotation
1. Interdependence	Only a few firms in the market; High degree of interdependence among firms with regards to pricing and output decisions.
2. Difficult to entry and exit	High barriers to entry

Examples :

Supermarkets, Banking industry, Chemicals, Medicinal drugs, Broadcasting, ... etc.

Oligopolistic firms are best off cooperating and behaving like a monopolist by producing a small quantity of output and charging a price above marginal cost.

Collusion: An agreement among firms in a market about quantities to produce or prices to charge.

Cartel: A group of firms acting in unison.

Competition among oligopoly firms

- **Price competition** : Rivalry between firms based solely on lower their prices, it might eventually result in a cut-throat price competition.
- **Non-price competition** : A form of competitors use quality competition or marketing competition strategies as packaging, delivery, or customer service rather than price to increase demand for their products.
- **Collusion** : It is a non-competitive secret or sometimes illegal agreement between rivals that attempts to disrupt the market's equilibrium so as to earn an abnormal profit.



Give examples of non-price competition in Hong Kong Supermarkets.

Give examples of non-price competition in the retail industry of Hong.

Thank you for
your attention