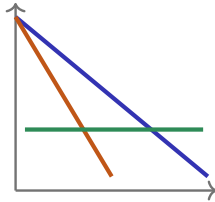


Imperfect Competition

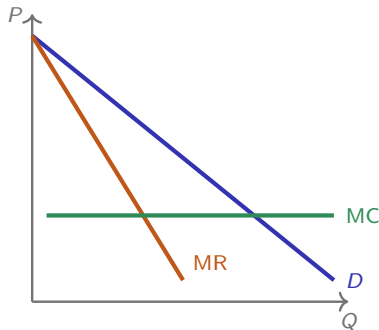
AP Microeconomics ■ Unit 4

AP Microeconomics



What we will cover

- 1 Market power & barriers
- 2 Monopoly
- 3 Price discrimination
- 4 Monopolistic competition
- 5 Oligopoly & game theory



Imperfect competition & market power

An **imperfectly competitive market** 不完全竞争市场: a firm faces a **downward-sloping demand curve** 向下倾斜的需求曲线, giving it **market power** 市场势力 – it can set $P > MC$.

- **Monopoly** 垄断 – one firm
- **Oligopoly** 寡头 – a few firms
- **Monopolistic competition** – many, differentiated
- **Monopsony** 买方垄断 – one buyer

Barriers to entry 进入壁垒 protect long-run economic profit.

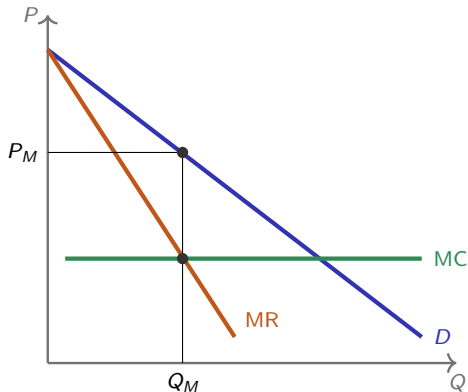


Scale and control can create market power

Imperfect competition & market power



Monopoly

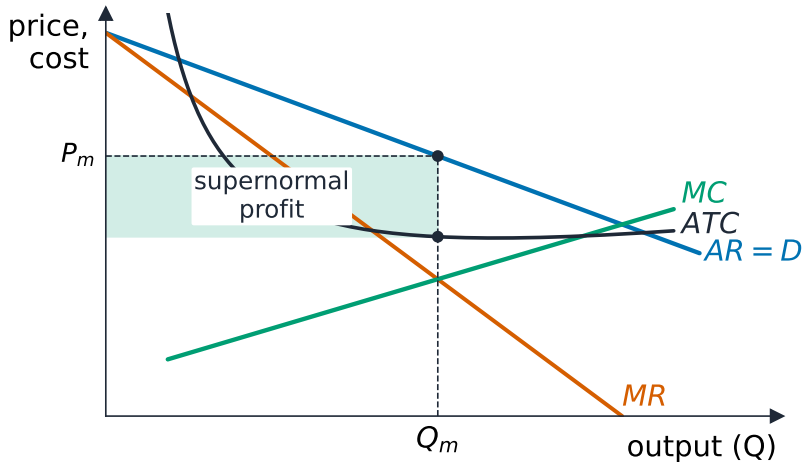


A monopoly is a **price maker** 价格制定者. Since it must cut price on every unit, MR lies **below** D .

- produce where $MR = MC$ (Q_M)
- price up on D (P_M)

$P_M > MC$: allocatively inefficient – a **deadweight loss** 无谓损失.

Monopoly



Monopoly – worked example

Find Q_M and P_M

Demand $P = 100 - Q$, so $MR = 100 - 2Q$ (twice as steep). Constant $MC = 20$.

$MR = MC$: $100 - 2Q = 20 \Rightarrow Q_M = 40$. Price on D : $P_M = 100 - 40 = \$60$.

$P_M = 60 > MC = 20$ – the wide gap is both the profit and the deadweight loss.

A **natural monopoly** 自然垄断 (water, power) has such large fixed costs that one firm serves the whole market at lower average cost than two.

Price discrimination

Price discrimination 价格歧视: charge different buyers different prices. It needs three things:

market power
(price maker)

sort by **will-
ingness to
pay** 支付意愿

prevent **re-
sale** 转售

Perfect price discrimination 完全价格歧视: charge each buyer their max. Output rises to $P = MC$ (**efficient, no deadweight loss**) – but the firm captures **all** consumer surplus.

Monopolistic competition

Many firms, each with a **differentiated product** 差异化产品 (restaurants, salons) – a little market power, a downward-sloping demand.

Short run

produce $MR = MC$;
profit or loss possible

Long run

free entry $\rightarrow$ zero profit;
 D **tangent** 相切 to ATC

Two lasting flaws: $P > MC$ (inefficient) and **excess capacity** 过剩产能. Firms use **non-price competition** 非价格竞争 – branding, advertising.

Oligopoly

A few large firms with **mutual interdependence** 相互依存 – each firm's best move depends on its rivals.

Collusion 合谋

form a **cartel** 卡特尔 – restrict output, raise price toward monopoly

Unstable

each member is tempted to **cheat** and sell more – cartels break apart

Game theory – the prisoner's dilemma

	B: High	B: Low
A: High	10, 10	2, 12
A: Low	12, 2	5, 5

Nash

A **payoff matrix** 收益矩阵 shows each firm's profit.

- **dominant strategy** 优势策略: best whatever the rival does – here "Low"
- **Nash equilibrium** 纳什均衡: neither gains by switching alone

Both pick Low (5, 5) though both prefer (10, 10) – the **prisoner's dilemma** 囚徒困境.

Game theory – the prisoner's dilemma

Firm B

		High price	Low price	(A, B) payoffs
Firm A	High price	10 / 10	4 / 14	
	Low price	14 / 4	6 / 6	

Nash equilibrium

Each firm's dominant strategy is Low — so both end at (6, 6), worse than (10, 10).

Key points

Market power $\Rightarrow$ downward demand, $MR < P$, $P > MC$

Monopoly: $MR = MC$, price up on D ; deadweight loss

Monop. competition: long-run normal profit, excess capacity

Oligopoly: interdependence $\rightarrow$ prisoner's dilemma

Check yourself

- 1 Why does a monopoly's MR lie below its demand curve?
- 2 What creates deadweight loss under monopoly?
- 3 Monopolistic competition in the long run: what profit?
- 4 In the prisoner's dilemma, what is the dominant strategy?

Answers 1. it must cut price on every unit to sell one more 2. output below the efficient level 3. zero economic profit 4. to defect – both are worse off