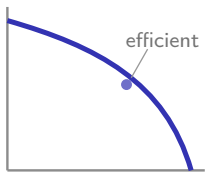
Basic Economic Concepts

AP Microeconomics ▪ Unit 1

AP Microeconomics



What we will cover

1. Scarcity & choice
2. Economic systems & prices
3. Production possibilities curve
4. Comparative advantage & trade
5. Costs & thinking at the margin
6. Consumer choice

1

Scarcity

The economic problem

A market stall has one hour left

The seller can pack 30 fruit boxes or deliver 12 orders. The same worker cannot do both at once.

$$OC_{1 \text{ delivery}} = \frac{\text{boxes forgone}}{\text{deliveries gained}} = \frac{30}{12} = 2.5 \text{ boxes}$$

Scarcity 稀缺性 forces a choice even when both activities are useful. **Opportunity cost** 机会成本 is the next-best alternative forgone: here, **2.5 boxes** per extra delivery.

Scarcity, and the resources it applies to

economics 经济学	begins with one stubborn fact: wants are effectively unlimited, and the **resources** 资源 to satisfy them are not
land	natural resources, and the rent they earn
labor 劳动	human effort, and wages
capital	tools, machines and buildings, and interest
entrepreneurship 企业家才能	organising the other three and bearing the risk – and profit
the consequence	every choice has an opportunity cost: the next best alternative given up

> Scarcity is not poverty. Even a rich society must choose, which is why the subject applies to every economy at every income level.

Factors of production

Land
土地
natural resources

Labour
劳动
human effort

Capital
资本
tools & machines

Entrepreneur
企业家才能
combines & takes risk

The four **factors of production** 生产要素 are the scarce resources every economy allocates.

2 Systems & prices

Three economic systems

Market
市场经济

buyers & sellers decide through **prices**

Command
计划经济

central **government** owns & plans

Mixed
混合经济

markets + government; almost every country

Market, command, mixed – in words

Fictional ways to allocate school meals

Market mechanism	Private canteens choose menus for profit; families choose what to buy at stated prices.
Command mechanism	A public agency sets menus, output quotas and who receives meals.
Mixed arrangement	Private canteens sell meals; public funding provides meals for eligible students.

Compare who decides what is produced, how resources are used, and who receives output. One school's arrangement does not identify an entire country's economic system.

Prices coordinate a market

A fictional bakery: a signal and a response

A sustained rise in demand raises the price customers offer for bread. Holding costs and other conditions constant, selling extra bread becomes more profitable. The bakery may use idle oven time to increase output.

$$\text{higher demand} \longrightarrow \text{higher price} \longrightarrow \text{incentive to expand output}$$

Prices carry information and **incentives** 激励. This is not a guarantee of the best social outcome: market power or pollution can weaken the result.

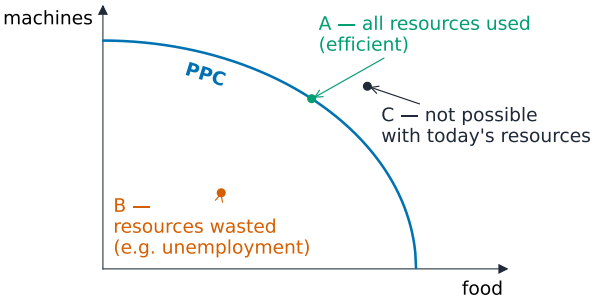
How the three systems answer the three questions

an economic system 经济体制	a society's way of answering what, how, and for whom to produce
market	decentralised: prices and profit decide, with no planner
command	central planning guides production and allocation
mixed	markets for most goods, the state for public goods and redistribution
why markets work	prices carry information and **incentives** 激励 automatically – no one needs to know the whole system
where they fail	public goods, externalities, market power, and inequality of outcome

> Prices coordinate decentralized choices; market failures can prevent an efficient outcome.

3 Production possibilities

The production possibilities curve



Read A, B and C.

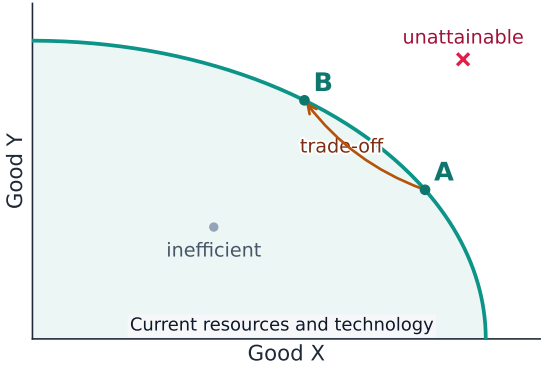
Which points are feasible now?

Which uses resources efficiently?

Can output rise without moving the frontier?

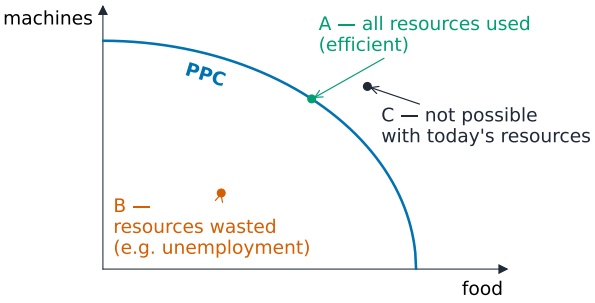
The **production possibilities curve (PPC)** 生产可能性曲线 shows maximum feasible combinations with current resources and technology.

The production possibilities curve, in detail



A production possibilities curve: efficient, inefficient, and unattainable points

Points on



A: productively **efficient** 有效率.

B: feasible, but resources are idle or misallocated.

C: currently **unattainable** 无法实现.

B to the frontier uses existing capacity. **Economic growth** 经济增长 shifts the frontier outward. Productive efficiency does not identify society's preferred output mix.

Why the curve bows outward

Efficient combinations

	Wheat	Steel
A	100	0
B	80	30
C	50	50

$$OC_{\text{steel}} = \frac{\text{wheat forgone}}{\text{steel gained}}$$

$$OC_{A\to B} = \frac{20}{30} \approx 0.67 \text{ wheat per steel}$$

$$OC_{B\to C} = \frac{30}{20} = 1.5 \text{ wheat per steel}$$

The **law of increasing opportunity cost** 机会成本递增规律: resources differ in suitability. Expanding steel sacrifices progressively more wheat per unit.

4 Comparative advantage

Absolute vs comparative advantage

absolute advantage 绝对优势

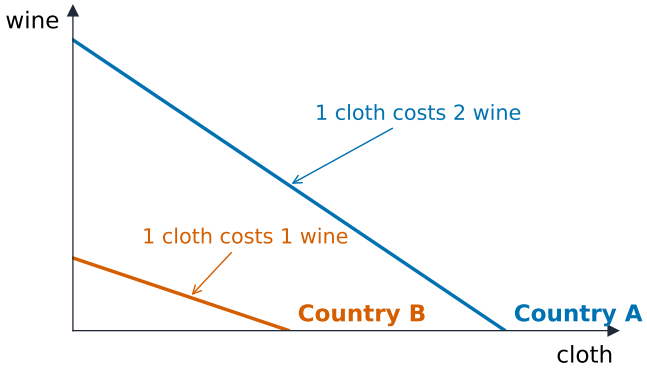
makes **more** with
the same resources

comparative advantage 比较优势

has the **lower opportunity cost**

Specialize where opportunity cost is lower, then **trade** 贸易 at mutually beneficial terms. One producer may have absolute advantage in both goods.

Absolute vs comparative advantage, in detail



Comparative advantage comes from differently-sloped production possibilities curves

Comparative advantage – worked example

Output per day: constant opportunity costs

Producer	Phones only	Shirts only
X	10	20
Y	4	4

$$OC_{\text{phone}} = \frac{\text{shirts forgone}}{\text{phones gained}}$$

$$OC_{\text{phone},X} = \frac{20}{10} = 2 \text{ shirts}; \qquad OC_{\text{phone},Y} = \frac{4}{4} = 1 \text{ shirt}$$

Y has the lower phone cost. X has the lower shirt cost: 0.5 phone versus 1 phone. X has absolute advantage in both.

Show a gain for each trading partner

Continue X and Y: exchange 1 phone for 1.5 shirts

For X, making a phone costs 2 shirts; importing it costs 1.5. X saves 0.5 shirt per phone.

For Y, making a phone costs 1 shirt; exporting it earns 1.5. Y gains 0.5 shirt per phone traded.

$$1 < \text{shirts per phone traded} < 2$$

These **terms of trade** 贸易条件 are strictly between both costs. At an endpoint one partner is indifferent; equal opportunity costs leave no such interval in this model.

Input tables: hours, not output

Fictional labor hours per unit

Producer	Hours per phone	Hours per shirt
A	2	1
B	3	6

$$OC_{\text{phone}} = \frac{\text{hours per phone}}{\text{hours per shirt}}$$

$$OC_{\text{phone},A} = \frac{2}{1} = 2 \text{ shirts}; \qquad OC_{\text{phone},B} = \frac{3}{6} = 0.5 \text{ shirt}$$

B has the lower opportunity cost. A uses fewer hours for both goods: absolute advantage differs from comparative advantage.

A change in one industry's capacity

AP 2023 Set 1, Q2(a)–(c): maximum outputs

Country	Wheat (bushels)	Cloth (yards)
Northland	100	300
Southland	100	50
Southland after the change	75	50

Before the change, one bushel of wheat costs 3 yards in Northland and 0.5 in Southland. Exchanging 10 wheat for 20 cloth benefits both.

$$OC_{\text{cloth},S} = \frac{75}{50} = 1.5 \text{ wheat}; \quad OC_{\text{cloth},N} = \frac{100}{300} = \frac{1}{3} \text{ wheat}$$

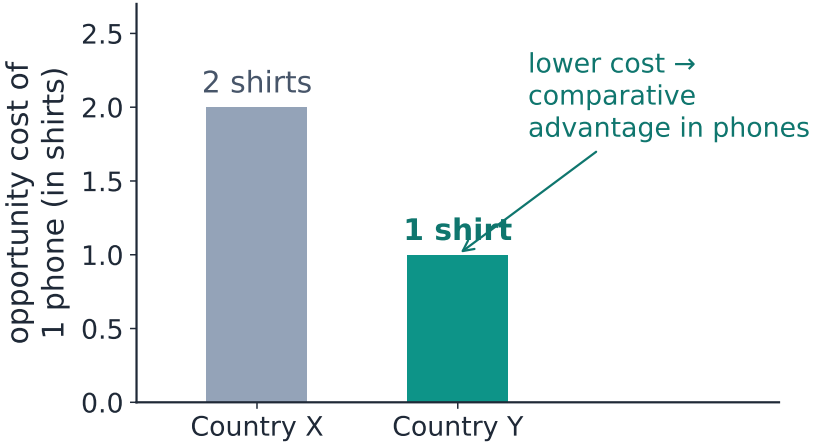
> Southland's frontier pivots inward on the wheat axis. It still has the higher cloth cost; it does not gain comparative advantage in cloth.

Comparative advantage: the calculation the exam repeats

absolute advantage	producing more of a good with the same resources
comparative advantage	producing it at a lower opportunity cost – and this is what decides trade
from an output table	opportunity cost of X = the other good's output divided by X's output
from an input table	the ratio runs the *other* way – X's input over the other good's input
then	each side **specialises** 专业化 where its opportunity cost is lower, and trades
terms of trade	any feasible rate strictly between the two opportunity costs makes both sides better off

> These calculations appear almost every year. Practise from both output and input tables, because the ratio inverts between them.

Comparative advantage – worked example, in detail



One country can be better at both goods and trade still helps both: mutually beneficial **terms of trade** 贸易条件 lie strictly between the two opportunity costs.

5 Costs & the margin

Cost-benefit analysis & sunk costs

Cost-benefit analysis 成本收益分析: act only when benefit $\geq$ cost – and the real cost is the **opportunity cost**, not just money spent.

The sunk-cost fallacy

You paid \$50 for a concert ticket (a **sunk cost** 沉没成本). That night you feel ill and would rather stay home.

The \$50 is gone **either way**, so ignore it – choose what you now prefer. Going just "to get your money's worth" is the **sunk-cost fallacy** 沉没成本谬误.

Think at the margin

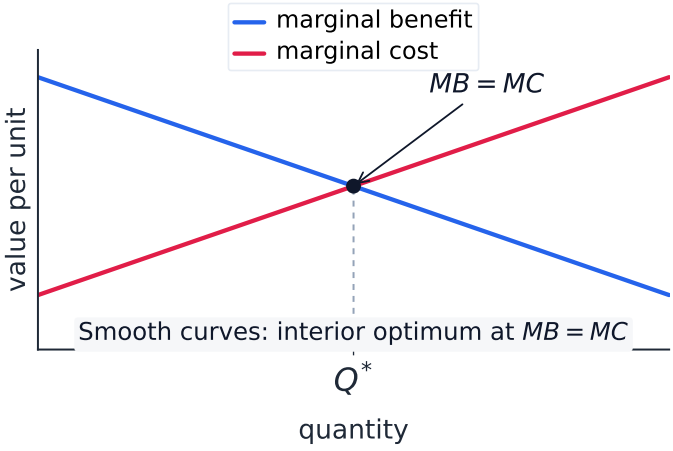
Marginal benefit 边际收益 and **marginal cost** 边际成本 refer to one extra unit.

Fictional units: no exact equality in the table

Unit	MB ($)	MC ($)	$MB - MC$ ($)	Cumulative net benefit ($)
1	12	5	7	7
2	9	5	4	11
3	6	5	1	12
4	3	5	-2	10

Choose 3 units: net benefit is greatest at \$12. Unit 4 costs more than it adds. With whole units, an optimum need not have $MB = MC$ exactly.

Think at the margin, in detail



Smooth interior case: net benefit is greatest where marginal benefit equals marginal cost

Consumer choice

AP 2025 Set 2, Q3: Lucy's marginal utility (utils)

Quantity	1	2	3	4	5	6
Good X	20	16	12	8	4	−2
Good Y	28	24	16	8	−4	−8

First: if both goods are free, which quantities maximize total **utility** 效用? What is total utility from 2 X and 2 Y? **Then:** X costs \$2, Y costs \$4, and the budget is \$20.

Find the best affordable combination and justify it with marginal utility per dollar.

> The **law of diminishing marginal utility** 边际效用递减法则 means each extra unit adds less satisfaction. Utility can eventually fall when the next unit's marginal utility is negative.

Lucy's choice: check utility and the budget

Free goods and total utility

Free: choose 5 X and 4 Y. The next unit of either adds negative utility.

$$TU_{2X,2Y} = (20+16)+(28+24) = 88 \text{ utils}$$

Paid goods: 4 X and 3 Y

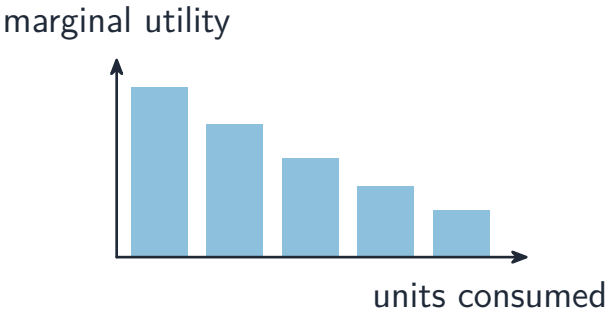
$$\frac{MU_{X,4}}{P_X} = \frac{8}{2} = 4 \text{ utils/\$}$$

$$\frac{MU_{Y,3}}{P_Y} = \frac{16}{4} = 4 \text{ utils/\$}$$

$$P_X Q_X + P_Y Q_Y = 2(4) + 4(3) = \$20$$

Next: one more Y replaces two X. It adds 8 utils but gives up $8 + 12 = 20$. One fewer Y frees \$4 for two more X: they add $4 - 2 = 2$ utils, but the lost Y was worth 16.

Marginal Analysis and Consumer Choice



Each extra unit consumed gives less extra satisfaction (diminishing marginal utility)

Key points

Scarcity forces choice; every choice has an **opportunity cost**

The **PPC** distinguishes productive efficiency, idle capacity and unattainable output

Comparative advantage + suitable terms of trade can benefit both sides

Choose at the **margin**: compare MB with MC; maximize net benefit

Exam tips

- Opportunity cost is the next-best alternative given up; **ignore sunk costs** in any decision.
- Comparative advantage (lower opportunity cost) determines specialisation and the gains from trade.
- Apply marginal analysis: keep doing an activity while **MB** $>$ **MC**, checking where net benefit is greatest.
- Maximise utility by equalising the **marginal utility per dollar** across goods.
- Read opportunity cost from the magnitude of the PPC slope; a bowed curve shows increasing cost.

6 Recap

Unit 1 – key takeaways

1 Opportunity cost

next-best alternative; ignore sunk costs

2 Trade

comparative advantage (lower OC) sets specialisation

3 Margin

Maximize net benefit. Smooth interior case: MB = MC.

4 PPC

slope magnitude is OC; bowed curve $\Rightarrow$ increasing cost

Check yourself

1. Why does the PPC bow outward?
2. Absolute or comparative advantage: which drives trade?
3. Should a sunk cost affect your next decision?
4. What rule does marginal analysis give?

Answers **1.** resources are not equally suited to both goods **2.** comparative **3.** no – it is already spent **4.** compare MB and MC; maximize feasible net benefit