

Cambridge IGCSE · Economics 0455 · Notes

The role of markets in allocating resources

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Read first: [The nature of the economic problem](#)

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What you need to know

By the end of this topic you should be able to:

1. **Explain how a market system works.** A market brings together **buyers** (demand) and **sellers** (supply) of a product. Their interaction sets a price, and that price decides how scarce resources are shared out. Know what **market equilibrium** is (the price at which the amount buyers want equals the amount sellers offer) and what **market disequilibrium** is (any other price, which leaves a shortage or a surplus).
2. **State the three key resource allocation decisions** that the economic problem forces on every economy: **what** to produce, **how** to produce it, and **for whom** to produce it.
3. **Explain how the price mechanism answers each of those three questions** in a market economy.

The whole topic is the same for every candidate (0455 has no Core/Extended split). Demand and supply curves, and how shifts in them change the price, are the next topics (price determination and price changes); here you need the idea, not the diagrams.

Understand it

Why resources have to be allocated

Resources (land, labour, capital and enterprise) are **scarce**, but wants are **unlimited**: that is the basic economic problem. Because there is not enough to make everything people want, every economy has to make choices about how its resources are used. This is **resource allocation**: deciding which uses the scarce resources go to.

The three key questions

Every economy, rich or poor, market or planned, has to answer the same three questions.

Question	What it decides	Examples of the choice
What to produce?	Which goods and services are made, and how much of each	Consumer goods (phones, food) or capital goods (machines, factories); necessities or luxuries; hospitals or roads
How to produce?	Which methods and which mix of resources are used	Labour-intensive (many workers, few machines) or capital-intensive (many machines, few workers); which technology; where to produce
For whom to produce?	Who gets the goods and services once they are made	Those who can pay (have the income) or those who need them; which groups of people, which regions, which markets

These are **decisions that come from** the economic problem; they are not the economic problem itself. "How much to produce?" and "when to produce?" are **not** separate key questions: how much of each product is part of "what".

Only **economic goods** (which use scarce resources) have to be allocated. **Free goods**, such as sunlight or the air, use up no scarce resources, so no one has to decide what, how or for whom about them.

What a market is

A **market** is any arrangement that lets buyers and sellers trade a product with each other. It does not have to be a place: a website, a phone call or a stock exchange is a market just as much as a street stall. There is a market for each product (rice, cars, haircuts) and for each resource (the labour market for nurses, the market for land).

A **market system** (or market economy) is one in which the key questions are answered mainly by **demand and supply**, through prices, rather than by the government. The two sides want different things:

- **buyers** (consumers, households) want to get as much satisfaction as they can from their limited incomes;
- **sellers** (firms, producers) want to make as much **profit** as they can.

Each side acts in its own interest, and the price that comes out of their trading coordinates both.

Equilibrium and disequilibrium

Suppose a market for mangoes has these plans each week:

Price per kg	Amount buyers want (kg)	Amount sellers offer (kg)	Result
\$1	100	20	shortage of 80 kg
\$2	80	40	shortage of 40 kg
\$3	60	60	equilibrium
\$4	40	80	surplus of 40 kg
\$5	20	100	surplus of 80 kg

Buyers want more at low prices; sellers offer more at high prices (it is more profitable).

- At \$3 the plans match: 60 kg is bought and 60 kg is sold. This is **market equilibrium**, and \$3 is the **equilibrium price**. With nothing else changing, the price stays there.
- At \$2 buyers want 80 kg but sellers offer only 40 kg: a **shortage** (excess demand) of 40 kg. This is **disequilibrium**. Buyers who miss out offer more, and sellers see they can charge more, so the **price rises**. As it rises, some buyers drop out and sellers offer more, until the shortage is gone at \$3.
- At \$4 sellers offer 80 kg but buyers want only 40 kg: a **surplus** (excess supply) of 40 kg. Unsold stock builds up, so sellers **cut the price**. As it falls, buyers want more and sellers offer less, until the surplus is gone at \$3.

So in a free market, shortages push prices up and surpluses push them down, and the price keeps moving towards equilibrium. Market **disequilibrium** means a shortage or surplus at the current price; it is **not** the same as market failure (which is when the market's allocation of resources is inefficient, a later topic).

The price mechanism and its three functions

The **price mechanism** is the way the forces of demand and supply set prices, and those prices then decide how resources are used. Prices do three jobs at once:

1. **Signalling.** A price carries information. A rising price tells producers that buyers want more of a product (or that it has become scarcer); a falling price tells them buyers want less.
2. **Incentive.** A higher price means more profit per unit, so it encourages firms to make more and to move resources into that product. A lower price reduces profit and encourages firms to make less and move resources out.
3. **Rationing.** When a product is scarce its price rises, so only those willing and able to pay the higher price get it. The price shares out (rations) the limited amount among buyers.

For example, if people decide to eat more vegetables and less meat, demand for vegetables rises and demand for meat falls. The price of **vegetables rises** and the price of **meat falls**. Farmers see more profit in vegetables and less in meat, so land, labour and capital move from meat to vegetables. No government told anyone to do this; prices did it.

Things prices do **not** do on their own: share income out **equally**, make sure everyone gets what they **need**, provide merit goods or public goods, or stop pollution. Those are reasons governments step in (later topics).

How the price mechanism answers the three questions

What to produce: consumers decide, through what they are willing and able to buy. Spending on a product is like a vote for it. Products in high demand have rising prices and high profits, so firms make more of them; products in low demand have falling prices and low profits, so firms make fewer or stop. This is sometimes called **consumer sovereignty**.

How to produce: firms decide, by choosing the cheapest method. To make the most profit, firms keep costs as low as possible, and the prices of the resources tell them which method is cheapest. If wages are high compared with the cost of machines, firms use **capital-intensive** methods; if wages are low, or machines are expensive, they use **labour-intensive** methods. When the price of a resource changes, firms switch methods.

For whom to produce: those who can afford to pay. Goods go to the people willing and able to pay their price. How much people can pay depends on their **income**, and income is set in markets too: owners of resources that are in high demand or scarce (skilled workers, owners of valuable land or capital) earn high wages, rent or profit and can buy the most; those whose resources are in low demand earn little and can buy less. So the market produces for those with the money to buy, not necessarily for those who need the product most.

Key facts and formulas

This topic has no formulas and no formula list in the exam. "Learn it" means you must remember it.

Fact	Status
The three key resource allocation questions: what to produce, how to produce, for whom to produce	Learn it
A market: any arrangement that brings buyers and sellers together to trade a product	Learn it
Market system: resources allocated through demand and supply (the price mechanism), not by the government	Learn it
Equilibrium: the price at which the quantity demanded equals the quantity supplied	Learn it
Disequilibrium: shortage (demand > supply, price rises) or surplus (supply > demand, price falls)	Learn it
Shortage or surplus = the gap between the quantity demanded and the quantity supplied at that price	Learn it
Functions of prices: signalling, incentive, rationing	Learn it
Demand rises → price rises → more profit → more resources move into the product (and the reverse for a fall)	Learn it
How: the cheapest method; high wages → capital-intensive, low wages → labour-intensive	Learn it
For whom: those willing and able to pay, which depends on income earned from selling resources	Learn it

How to do it

In the questions we have tagged for this topic (11 questions, 2021–2025), the parts about this topic are these. Each question has one part on this topic: the 20-mark Paper 2 questions have other parts on other topics.

Question type	Question parts
Multiple choice (concept)	8
Explain (4 marks)	2
Analyse (6 marks)	1

No Define (2) or Discuss (8) parts on this topic have been set yet, but a Discuss part on markets (for example "whether the price mechanism allocates resources better than the government") would use the same points, with the plan at the end of section 3.

1. Multiple choice (concept) (8 question parts)

1. **Read the stem for the word in bold**, usually **not**.
2. **Match each option to what you know**: the three questions, the three functions of prices, what a market is.
3. **Cross out options from other topics**. Limited resources and unlimited wants is the economic problem; a private and public sector is a mixed economy; merit goods, equal incomes and cutting externalities are government aims.

Variations you will meet:

- **The function or role of the price mechanism** (3 parts): the answer is about allocating scarce resources, guiding choices, sending signals, rationing, or prices moving to clear shortages and surpluses. The wrong options (or the right one in a "not" question) give the price mechanism a job it doesn't do: sharing income out equally, making markets fair, keeping prices stable, providing merit goods, keeping rivals out.
- **The three key questions** (2 parts): what, how, for whom. "When", "where" and "how much" are not among them. In "what does **not** relate to the three questions", match each option: consumer or capital goods is **what**; labour or capital is **how**; which income groups get the output is **for whom**; whether to supply economic or free goods is none of them, because free goods need no allocation.
- **What a market or market system is** (2 parts): a market is a system that lets people and firms buy and sell, not necessarily a place; a market system **necessarily** allocates resources through demand and supply.
- **The price signals after a change in tastes** (1 part): the product people want more of has a **rising** price; the one they want less of has a **falling** price. The signals are opposite, and resources move towards the rising price.

2. Explain (4 marks) (2 question parts)

These are marked **point plus explanation**: usually 1 mark for each point identified and 1 for developing it, so **two developed points** (or one point with a full chain of four links) earn all 4.

1. **Answer exactly what is asked.** "Explain two key resource allocation decisions" wants two of the three questions, each with what it means. "Explain how a market allocates resources" wants **one market** working through **price**, not the whole economy's factors of production.
2. **Point → develop.** Name the idea (1), then say what it means or what it causes, with an example (1).
3. **Keep price in the chain** for "how a market allocates": buyers and sellers → demand and supply → equilibrium price → a change in demand changes the price → profit signals firms → resources move.

For example, for a key decision: "One decision is **how** to produce (1). Firms must choose the method, for example a capital-intensive method using machines or a labour-intensive one using many workers (1)."

3. Analyse (6 marks) (1 question part)

Analyse means building **chains of reasoning**: each link says why the next one happens. The mark scheme gives up to 1 mark per link, often with a cap (for example, at most 3 marks for just naming things), so you need at least **two or three developed chains**, not a list.

1. **Start with a precise definition** of the key term, such as the price mechanism: demand and supply setting prices (1) in a market economy (1).
2. **One paragraph per point.** For "how the price mechanism answers the three questions", write a paragraph each for what, how and for whom, and name the question at the start of each.
3. **Develop each one through price**: what → price rises for goods in high demand → profit incentive → more made; how → relative prices of labour and capital → cheapest method; for whom → incomes from selling resources → who can afford to buy.
4. **No diagram is needed** unless asked. A demand and supply diagram showing only an equilibrium does not answer the three questions and wastes time.

If a Discuss (8) part is set on this topic, add the other side and a judgement: for example, the price mechanism responds quickly and uses resources efficiently, but it produces only for those who can pay, ignores need and can leave some goods unmade. End with a justified conclusion ("it depends on ..."). Levels are marked: both sides developed with a judgement reaches the top level (6–8).

Worked examples

Example 1

Consumers switch from buying bottled water to refilling their own bottles from water fountains. What price signals would the market system send?

	price of bottled water	price of refillable bottles
A	falls	falls
B	falls	rises
C	rises	falls

	price of bottled water	price of refillable bottles
D	rises	rises

[1]

Demand for bottled water falls, so its price falls; demand for refillable bottles rises, so their price rises. The answer is **B**. (1) Firms making bottled water earn less profit and move resources out; firms making refillable bottles earn more and move resources in.

Example 2

Explain how a market responds to a fall in demand for petrol cars. [4]

In the market for petrol cars, buyers now want fewer cars at the current price, so there is a surplus of unsold cars (1). To sell their stock, car makers cut the price of petrol cars (1). The lower price means less profit on each car, which signals to car makers that this product is less wanted and gives them an incentive to make fewer (1). Resources such as workers and factory space are moved out of petrol cars into products with rising demand, such as electric cars (1).

Each sentence adds a new link, and every link runs through price, which is what "how a market" questions reward.

Example 3

Many people now read books on screens rather than on paper. Analyse how the price mechanism reallocates resources in response. [6]

The price mechanism is the way the forces of demand and supply set prices in a market economy (1), and those prices then decide how resources are used (1).

What to produce. Demand for e-books rises and demand for printed books falls (1). The price of e-books tends to rise and the price of printed books tends to fall, which signals where consumers want resources to go (1). Higher profits on e-books give firms an incentive to publish more of them, while lower profits lead printers to cut output (1), so writers, editors and capital move from printing to digital publishing (1).

How to produce. Making e-books needs computers and software rather than presses and paper, so publishers switch to the cheapest method for the new product (1). If skilled digital workers become scarce, their wages rise, so firms use more capital, such as automated formatting software, in place of labour (1).

For whom. The e-books go to readers who are willing and able to pay for them and for a device to read them on (1), so readers on low incomes may get fewer new books (1).

This is more than the 6 marks available; aim for a little more than the maximum, as a slip in one chain still leaves full marks.

Common mistakes

- **Not naming the three questions.** Examiners report that many candidates, even strong ones, wrote about the price mechanism in general and never said "what to produce", "how to produce" and "for whom". Name each one and link it to price.
- **Treating "a market" as the whole economy.** In "explain how a market allocates resources", many answers described how land, labour and capital are shared across the whole economy. Write about one market: buyers, sellers, demand, supply, price.
- **Leaving out price.** Examiners found price was rarely mentioned in answers about how a market allocates. The price change is the signal and the incentive; without it the explanation is missing its middle link.
- **Inventing a fourth question.** "How much to produce?" is not one of the key questions; it is part of "what".
- **Mixing up the economic problem and the allocation decisions.** The economic problem is scarce resources against unlimited wants; the three questions are the decisions it creates. Asked to define one, don't give the other.
- **Half an answer for "how to produce".** "Firms decide how to produce" earns little. Say it depends on the relative cost of labour and capital, and name labour-intensive or capital-intensive methods.
- **Drawing a diagram nobody asked for.** An equilibrium diagram does not answer the three questions and uses up time.
- **Confusing market failure with disequilibrium.** A shortage or surplus is disequilibrium; market failure is an inefficient allocation of resources, such as too much of a harmful good.
- **Giving prices jobs they don't do.** Prices ration, signal and give incentives; they do not share income equally or make sure everyone's needs are met.

How to get the marks

- **Multiple choice is 1 mark with no penalty for a wrong answer**, so never leave one blank. Watch for **not** in bold.
- **Identify** means name or select; **Define** means give the exact meaning. One precise sentence each; an example helps.
- **Explain** (4 marks) means say **why or how**, making the links clear: two points, each with a development (1 + 1, 1 + 1).
- **Analyse** (6 marks) means examine in detail, showing how one thing leads to another: two or three chains, each several links long, starting with a definition. Listing ideas without development is capped.
- **Discuss** (8 marks) means both sides, each developed, then a justified judgement. Without both sides the answer stays in the middle level.
- **Use economic words:** demand, supply, equilibrium price, shortage, surplus, signal, incentive, profit, ration, labour-intensive, capital-intensive, income.
- **Use the context** in the question's stem when one is given (a named product or country), but the marks are for the economics, so keep every sentence about how prices move resources.
- **Label each part clearly** (a), (b), (c) so the examiner can find it.

Quick check

1. What is **not** one of the key resource allocation questions?
 - **A** for whom to produce
 - **B** how to produce
 - **C** how much tax to charge
 - **D** what to produce
2. In a market, at a price of \$6 buyers want 250 units and sellers offer 400 units. State whether there is a shortage or a surplus, how big it is, and which way the price will move.
3. What is the rationing function of price?
 - **A** A higher price encourages firms to make more of a product.
 - **B** A higher price means only those willing and able to pay get a scarce product.
 - **C** A price change tells firms what consumers want.
 - **D** The government limits how much each person can buy.
4. Explain how the price mechanism decides how goods are produced. **[4]**

Answers

1. **C.** Tax is a government decision, not one of the three questions (what, how, for whom). (1)
2. $400 - 250 = 150$: a **surplus** of 150 units. Sellers cut the price to get rid of unsold stock, so the price **falls** towards equilibrium.
3. **B.** A is the incentive function, C the signalling function, and D is government rationing, not price. (1)
4. Firms choose how to produce by looking for the cheapest method, since that gives the highest profit (1).
The prices of resources tell them which method is cheapest (1). If wages rise compared with the cost of machines, firms switch to capital-intensive methods (1), using more machines and fewer workers; if machines become dearer, they use more labour-intensive methods (1).

Past questions to try

- 0455/12/F/M/25 Q5: which choice is not part of the three key questions.
- 0455/12/F/M/24 Q6: price signals when tastes change.
- 0455/11/O/N/24 Q5: what necessarily describes a market system.
- 0455/11/M/J/21 Q5: what economists mean by a market.