Cambridge IGCSE · Economics 0455 · Notes

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. **Define the economic problem**: people's wants have no limit, but the resources that could satisfy them are finite, so there is not enough to go round. This is **scarcity**.
2. **Give examples of the economic problem for four groups**: consumers (limited income), workers (limited time and skills), producers (limited factors of production) and governments (limited tax revenue and budgets). Each group must make choices because of it.
3. **Tell economic goods and free goods apart.** An economic good uses up scarce resources, so it has an opportunity cost. A free good needs no scarce resources, is unlimited compared with what people want, and has no opportunity cost.

Understand it

Wants and resources

A **want** is anything a person would like to have: food and a home, but also a phone, a holiday, a faster internet connection, a better hospital. Wants have **no limit**. When one is satisfied, another takes its place, and new products create new wants.

A **resource** is anything used to produce goods and services: land and raw materials, workers, machines and buildings, and the people who organise production. These are the **factors of production** (the next topic). Resources are **finite**: there is only a certain amount at any time, and some, such as oil or gold, run out as they are used.

The economic problem

Put the two together. Unlimited wants **exceed** finite resources, so not every want can be satisfied. This is the **economic problem**, and the situation it creates is called **scarcity**.

$$\text{unlimited wants} > \text{finite resources} \;\Rightarrow\; \text{scarcity} \;\Rightarrow\; \text{choice} \;\Rightarrow\; \text{opportunity cost}$$

Because of scarcity, everyone has to **choose** what to have and what to go without. Choosing one thing means giving up the next best alternative: that sacrifice is the **opportunity cost** of the choice (the topic after next covers it in full).

A short example: a student has 20 dollars to spend. A concert ticket costs 15 dollars and a book costs 12 dollars. Together they cost 27 dollars, which is 7 dollars more than the student has, so they must choose. If the ticket is chosen, the book is the opportunity cost.

It never goes away

The economic problem is **permanent**, even in rich countries:

- wants keep growing as incomes rise and new products appear;
- populations grow and people live longer, so more resources are needed;
- some resources are used up (oil, minerals) or damaged (soil, fish stocks).

Economic growth lets a country produce more, but wants grow too. A country with a high income per head still makes choices every day, so it still faces the economic problem.

Note what the economic problem is **not**. It is not a particular difficulty such as inflation, unemployment or poverty, and it is not "high prices" or "not enough money" in general. It is the basic mismatch between unlimited wants and finite resources. The questions it forces an economy to answer (what to produce, how to produce it, and for whom) are **results** of the economic problem, covered under the allocation of resources.

The four groups

The economic problem looks slightly different for each group, but the logic is always the same: limited means, unlimited wants, so choices.

Group	What is limited	Examples of the choices it forces
Consumers	Income (and savings)	Spend on a holiday or a new laptop; spend now or save
Workers	Time, energy, skills	Which job to take; work longer hours or have more leisure; whether to train for new skills
Producers (firms)	Land, labour, capital and enterprise; finance	What to make, how many to make, which machines to buy
Governments	Tax revenue and borrowing	Spend on a hospital, a school or a road; how much to spend on pensions or defence

For a government, the limit is usually its budget: it cannot pay for every project people ask for, so it must rank them. A new hospital might not be built simply because the government does not have enough money once its other spending is paid for.

Economic goods and free goods

An **economic good** is a product that needs scarce resources to make or provide. Using those resources for it means they cannot be used for something else, so it has an **opportunity cost**. Almost every product is an economic good: food, clothes, cars, haircuts, education.

A **free good** is one that is so plentiful, compared with what people want, that using it takes nothing away from anyone else and needs no scarce resources to provide. It has **no opportunity cost**. Examples are sunlight, the air around us and sea water.

The word "free" here is the economist's meaning, not the everyday one:

- **Free of charge is not the same as a free good.** A free sample, a state school or a free hospital appointment costs the user nothing, but it uses scarce resources (teachers, doctors, buildings, materials), paid for by a firm or by taxes. These are economic goods.
- **A free good is not a public good.** Street lighting and defence are provided by the government, but they use scarce resources, so they are economic goods.
- **The same thing can be either.** Sea water is a free good; sea water that has been purified for drinking has used labour, energy and machinery, so it is an economic good. Clean air in a city can become scarce if pollution means resources must be used to clean it.

The quick test: **does providing more of it use up resources that could have been used for something else?** If yes, it is an economic good. If no, it is a free good.

Key facts and formulas

This topic has no formulas to use in a calculation, and the exam gives no formula list. "Learn it" means you must remember the definition.

Fact	Status
Economic problem: unlimited (infinite) wants but finite (limited) resources	Learn it
Scarcity: there are not enough resources to satisfy all wants	Learn it
Finite resources: resources used in production that are limited in amount and can run out	Learn it
Opportunity cost: the next best alternative given up when a choice is made	Learn it
Economic good: uses scarce resources, so it has an opportunity cost	Learn it
Free good: needs no scarce resources, unlimited compared with wants, no opportunity cost (sunlight, air, sea water)	Learn it

Fact	Status
Consumers are limited by income, workers by time and skills, producers by factors of production, governments by tax revenue	Learn it
Scarcity → choice → opportunity cost	Learn it

How to do it

In the questions we have tagged for this topic (24 questions, 2021–2025), we counted the parts about the economic problem. One Paper 2 question has two such parts, so there are 25 parts from 24 questions.

Question type	Questions
Multiple choice (concept)	22
Explain (4 marks)	2
Define (2 marks)	1

No 6-mark (Analyse) or 8-mark (Discuss) part on this topic has been set yet, but the economic problem is often the first step of a longer answer (why a government must choose, why a worker picks one job over another). Worked example 4 shows a 6-mark plan.

1. Multiple choice (concept) (22 questions)

1. **Decide what the question is really asking**: the **cause** of the economic problem, an **example** of it, or whether something is a **free or economic good**.
2. **Cause questions:** the answer always rests on **unlimited wants** and/or **finite (limited, scarce) resources**. Cross out any option that says resources are unlimited, wants are limited, or blames a particular issue (inflation, poverty, taxes, investment, education, market failure, external costs).
3. **Example questions:** find the group and its limited means. A consumer with too little income for everything, a producer with finite resources, a government with too little money for a project: each is the economic problem. The answer names the scarce means or the choice it forces.
4. **Free good questions:** apply the quick test. Pick the item that needs no scarce resources (sunlight, air, sea water). Reject anything given "free of charge" (samples, state healthcare, state education) or provided by the government (defence).
5. Read every option before choosing. Two options can sound right; the best one names **scarcity** in the economist's sense.

Variations you will meet:

- **"What causes the economic problem?", "Why will scarcity always exist?", "What must be a consequence of scarce resources?"** (11 questions), including a passage about new oil supplies where the link to the economic problem is that oil is a **limited** resource, not that it is expensive or causes external costs. The answer is unlimited wants, finite resources, or wants being greater than what can be produced. "Insufficient resources to satisfy unlimited wants" is the textbook description; "insufficient income to satisfy needs" is too narrow.

- **A group in a context** (3 questions): a consumer whose money does not cover two items, a government that cannot afford a new building, citizens of a rich country who still have to choose. If the group must choose because its means are limited, it faces the economic problem.
- **Free goods and opportunity cost** (4 questions): "Which is a free good?", "Which has an opportunity cost?", "Which statement is correct?". Free goods have no opportunity cost; economic goods are scarce and have one.
- **Concepts in a passage about a scarce gas** (3 questions, one question set on three papers): a government that holds and sells stocks of a gas that takes thousands of years to form. Match each detail to a concept: the gas is a natural resource, so a **factor of production** (land); the government holding it puts it in the **public sector**. Reject pairs with a concept the passage never shows, such as a subsidy or a private monopoly.
- **The key questions scarcity creates** (1 question): what, how and for whom to produce. "When will we produce?" is not one of them.

2. Explain (4 marks) (2 questions)

Each linked point earns 1 mark, up to 4. Plan: **point → develop → link to the group → consequence**.

1. **State the problem:** wants are unlimited (1) but resources are finite (1).
2. **Name the result:** this causes scarcity (1).
3. **Apply it to the group in the question:** for consumers, limited income (1) means they cannot buy everything they want (1); for a government, limited tax revenue; for a firm, limited factors of production.
4. **Finish with the consequence:** a choice must be made (1), and choosing one item means giving up the next best alternative, the opportunity cost (1), with a short example (1).
5. **If asked why it always exists:** wants keep growing (1), population is rising and people live longer (1), and some resources are being used up (1), so there will never be enough to produce everything people want (1).

Four developed, correct sentences are enough. Stick to the group the question names.

3. Define (2 marks) (1 question)

Two marks means two parts of a definition. Give the **whole** term:

- **opportunity cost:** the next best alternative (1) that is given up (1);
- **the economic problem:** unlimited wants (1) and finite resources (1);
- **finite resources:** limited, will run out (1) and used to produce goods and services (1);
- **free good:** needs no resources to produce / unlimited in supply (1) and so has no opportunity cost (1).

An example is not needed in a definition and earns nothing on its own.

Worked examples

Example 1

A nurse has 60 hours a week outside her normal job and sleep. She would like to work 20 hours of extra shifts, spend 25 hours on a part-time degree course and spend 30 hours with her family.

Why can she not do all three?

- **A** Her wage rate is too low.
- **B** The degree course has no opportunity cost.
- **C** Her time is a finite resource.
- **D** The hospital does not need more nurses.

[1]

She wants $20 + 25 + 30 = 75$ hours but has only 60: her wants exceed her finite time by 15 hours. As a worker, the resource she is short of is time, so she must choose between the three uses. The answer is **C**. (1)

A is wrong because a higher wage would not create more hours. B is wrong: the course uses scarce time, so it does have an opportunity cost (the shifts or family time given up). D is not in the information, and the problem would remain even if the hospital needed more nurses.

Example 2

Define an **economic good**. **[2]**

An economic good is a product that uses scarce resources to make or provide (1), so producing it has an opportunity cost (1).

Example 3

Explain why a government faces the economic problem. **[4]**

A government's wants are unlimited, because people keep asking it for more hospitals, schools, roads and pensions (1). The resources it can use are finite, since its tax revenue and borrowing are limited (1). This means there is scarcity: it cannot pay for everything it would like to (1). So it has to choose, and if it spends on a new hospital, the school it could have built instead is the opportunity cost (1).

Example 4

Analyse how the economic problem affects a worker's choices. **[6]**

Each developed point earns marks: a point (1) plus its development (1), three times.

A worker has limited time: there are only 24 hours in a day (1). So the worker must choose between hours of paid work and hours of leisure; an extra hour of work gives more income but its opportunity cost is an hour of rest or time with family (1).

A worker also has limited skills and qualifications (1). This limits which jobs they can do, so they must choose between the jobs open to them, for example a higher-paid job far from home or a lower-paid job nearby (1).

Training could widen the choice of jobs, but it also uses scarce time and money (1). Choosing to train means giving up the wages that could have been earned during that time, so even improving skills involves a choice and an opportunity cost (1).

Common mistakes

- **Describing a problem an economy has, not the economic problem.** Inflation, unemployment or poverty are problems, but "the economic problem" means unlimited wants and finite resources. Read the stem carefully.
- **Giving only half the idea.** Stating "unlimited wants" without "finite resources" (or the other way round) loses marks. Examiners also see "finite" defined correctly but "resource" not defined at all: a resource is something used to produce goods and services.
- **Writing about what, how and for whom instead of the problem itself.** Those key questions are **results** of the economic problem; they are not its definition.
- **Not applying it to the group asked about.** If the question is about consumers, talk about limited income and consumers' choices, not just the problem in general.
- **Stopping at "it exists" when asked why it always exists.** Add why: wants keep growing, the population rises, resources are used up.
- **Confusing a free good with something free of charge or with a public good.** State schools, free samples and street lighting all use scarce resources. The key test is no opportunity cost and no scarce resources needed; "it costs nothing to make" or "it is everywhere" is too vague.
- **Adding examples to a definition** when none is asked for. They take time and earn no marks on their own.

How to get the marks

- **Command words.** *Define* means the exact meaning of the term, both parts. *Identify* means name or pick out the right items, no explanation. *Explain* means give reasons, linking each step to the next ("so", "this means", "as a result"). *Analyse* means develop a chain of reasoning in detail. *Discuss* means both sides and a justified conclusion.
- **Explain (4 marks) is point-marked.** Every correct, relevant, linked point is worth a mark, up to the maximum. Four clear sentences that build a chain (wants → resources → scarcity → choice → opportunity cost) are the safest route.
- **Use the terms.** Say "unlimited wants", "finite resources", "scarcity" and "opportunity cost" rather than "not enough stuff". Examiners reward the economic vocabulary.

- **Answer the question set.** If it names consumers, workers, producers or a government, every point should be about that group.
- **Respect limits.** If a question asks for two examples, give two; extra ones are not marked.
- **Use the stimulus but go beyond it.** Section B stems set the scene; your points can use economic ideas that are not in the stem.
- **Multiple choice:** cross out the options that describe other topics first, then pick the one that names scarcity, unlimited wants or finite resources.

Quick check

1. Which of the following is a free good?
   - **A** bottled mineral water
   - **B** the air in a mountain valley
   - **C** a public park
   - **D** a state school
2. A family earns 600 dollars a month. It would like to spend 350 dollars on rent, 200 dollars on food and 150 dollars on a new phone. Explain why this family faces the economic problem, and what it must do. **[4]**
3. Explain why sunlight is a free good but electricity from solar panels is an economic good. **[4]**
4. Define **scarcity**. **[2]**

Answers

1. **B**. Air in a mountain valley needs no scarce resources and using it takes nothing from anyone else, so it has no opportunity cost. Bottled water uses labour, plastic and transport; a public park and a state school are provided by the government using scarce land and workers, paid for by taxes. (1)
2. The family wants to spend 350 + 200 + 150 = 700 dollars (1), but its income is limited to 600 dollars, which is 100 dollars short (1). Its wants exceed its limited means, so it faces scarcity (1). It must choose, for example going without the new phone, which becomes the opportunity cost of paying the rent and buying food (1).
3. Sunlight reaches us without anyone using resources to provide it (1), and one person using it does not reduce what others can have, so it has no opportunity cost (1). Electricity from solar panels needs panels, cables and workers, which are scarce resources (1); those resources could have been used to make something else, so the electricity has an opportunity cost (1).
4. Scarcity is when there are not enough resources (1) to satisfy all of people's wants (1).

Past questions to try

- **0455/12/M/J/22 Q1**: picking out a free good.
- **0455/12/O/N/24 Q1**: the key questions that scarcity creates.
- **0455/13/M/J/23 Q1**: why people in a rich country still face the economic problem.
- **0455/13/O/N/21 Q3**: concepts linked to a resource in limited supply.