



Cambridge (CIE) A Level Economics



Your notes

Production Possibility Curves

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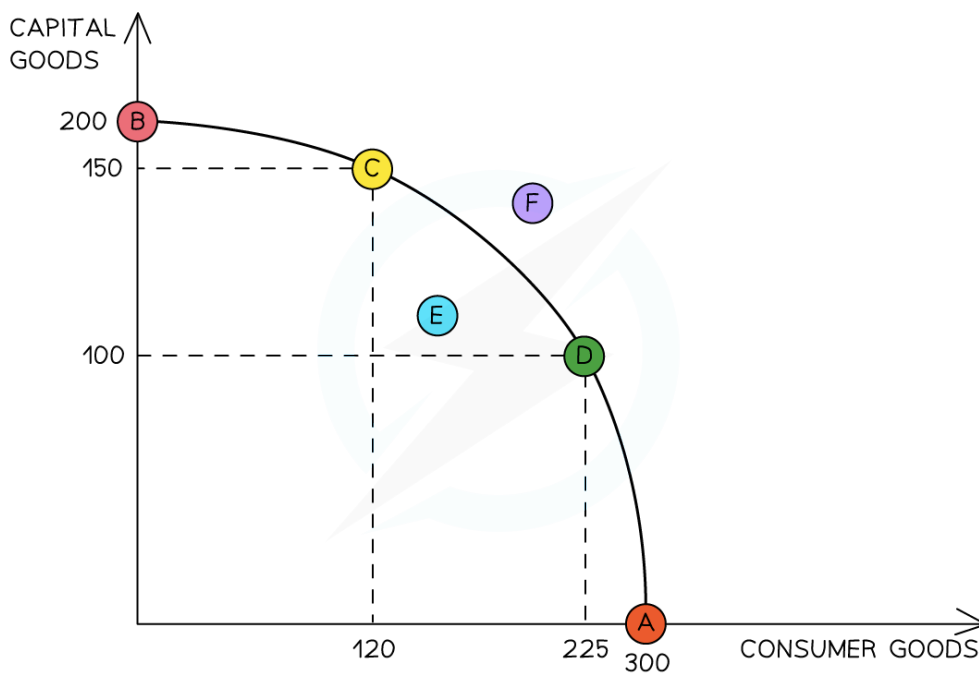
- * Production Possibility Curves (PPCs)



An introduction to production possibility curves (PPCs)

- The Production Possibility Curve (PPC) is an economic model that considers the maximum possible production (output) that a country can generate if it uses all of its factors of production to produce only two goods or services
 - Any two goods or services can be used to demonstrate this model
- Many PPC diagrams show **capital goods** and **consumer goods** on the axes
 - **Capital goods are assets** that help a firm or nation to **produce output** (manufacturing). For example, a robotic arm in a car manufacturing company is a **capital good**
 - **Consumer goods are end products** and have **no future productive use**. For example, a watch

Production possibility curve (PPC)



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A PPC for an economy demonstrating the use of its resources to produce capital or consumer goods

Diagram analysis

1. The use of PPC to depict the maximum productive potential of an economy



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- The curve demonstrates the **possible combinations of the maximum output** this economy can produce **using all of its resources** (factors of production)
- At A, its resources are used to produce **only consumer goods** (300)
- At B, its resources are used to produce **only capital goods** (200)
- Points C and D both represent **full** (efficient) use of an economy's resources, as these points **fall on the curve**. At C, 150 capital goods and 120 consumer goods are produced

2. The use of PPC to depict opportunity cost

- To produce one more unit of capital goods, this economy must give up production of some units of consumer goods (limited resources)
- If this economy moves from point **C (120, 150)** to **D (225, 100)**, the **opportunity cost** of producing **an additional 105 units of consumer goods** is 50 capital goods
- A **movement in the PPC** occurs when there is any change in the **allocation of existing resources** within an economy, such as the **movement** from point C to D

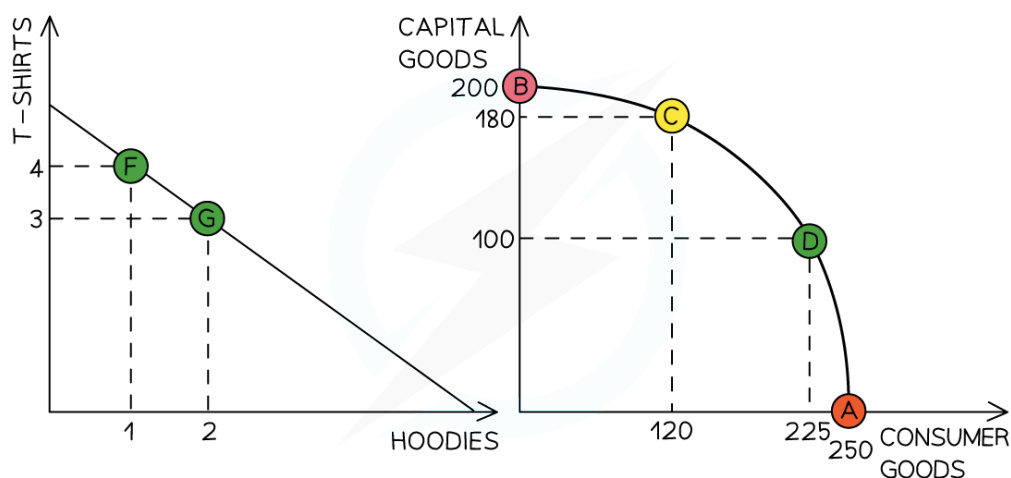
The shape of the PPC

Increasing versus constant opportunity cost

- Two different types of opportunity cost can be illustrated using PPC curves
- **Constant opportunity cost** occurs when all of the factors of production used to produce one good can be switched to producing the other good without any loss/wastage of resources
 - One unit given up of one good results in one unit gained of the other
- **Increasing opportunity cost** occurs when the factors of production cannot be perfectly switched between the two products
 - One unit given up of one good results in less than one unit gained of the other



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Constant opportunity cost occurs when production is switched from T-shirts to hoodies. Increasing opportunity cost occurs when production is switched from consumer goods to capital goods

Diagram analysis

Left diagram

- For a country producing only **T-shirts and hoodies**, the factors of production can **easily be switched** between the two products, e.g. the same labour and land (cotton) can be used to make both products
 - Changing production** from point F to G decreases the production of T-shirts from 4 to 3 and increases the production of hoodies from 1 to 2
 - There is **constant opportunity cost** when production is switched and **the PPC is a straight line**

Right diagram

- For a country producing **consumer goods and capital goods**, the factors of production **cannot easily be switched** between the two products, e.g. the labour required to make a washing machine may not have the skill to produce a robotic arm used in car manufacturing
 - Changing production** from point A to point C results in a decrease of 130 consumer goods but yields an increase of 180 capital goods
 - Changing production from point C to point B results in a decrease of 120 consumer goods but only yields an increase of 20 capital goods
 - There is an **increasing opportunity cost** as production moves closer and closer to any particular axis

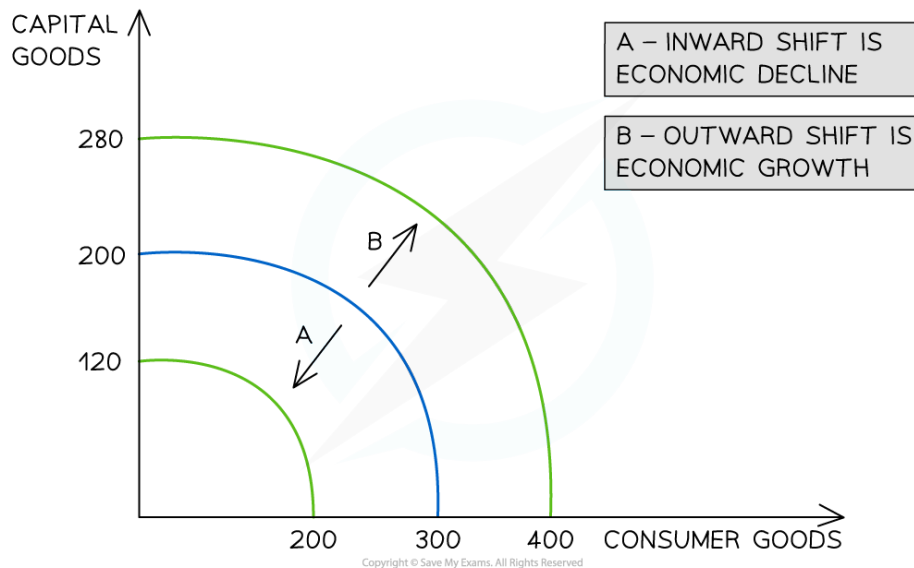
Shifts in the PPC

- As opposed to a movement along the PPC described above, the **entire PPC of an economy can shift** inwards or outwards, thereby changing its production possibilities

Inward and outward shift of the PPC



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Outward shifts of a PPC show potential economic growth and inward shifts show economic decline

Diagram explanation

1. Economic growth

- **Economic growth** occurs when there is an increase in the **productive potential** of an economy
 - This is demonstrated by an **outward shift** of the entire curve. **More consumer goods** and **more capital goods** can now be produced using all of the **available resources**
- This shift is caused by an increase in the **quality or quantity of the available factors of production**
 - One example of how the **quality** of a factor of production can be **improved** is through the impact of **training and education on labour**. An educated workforce is a **more productive workforce** and the **production possibilities increase**
 - One example of how the **quantity** of a factor of production can be **increased** is through a change in migration policies. If an economy allows **more foreign workers** to work productively in the economy, then the **production possibilities increase**

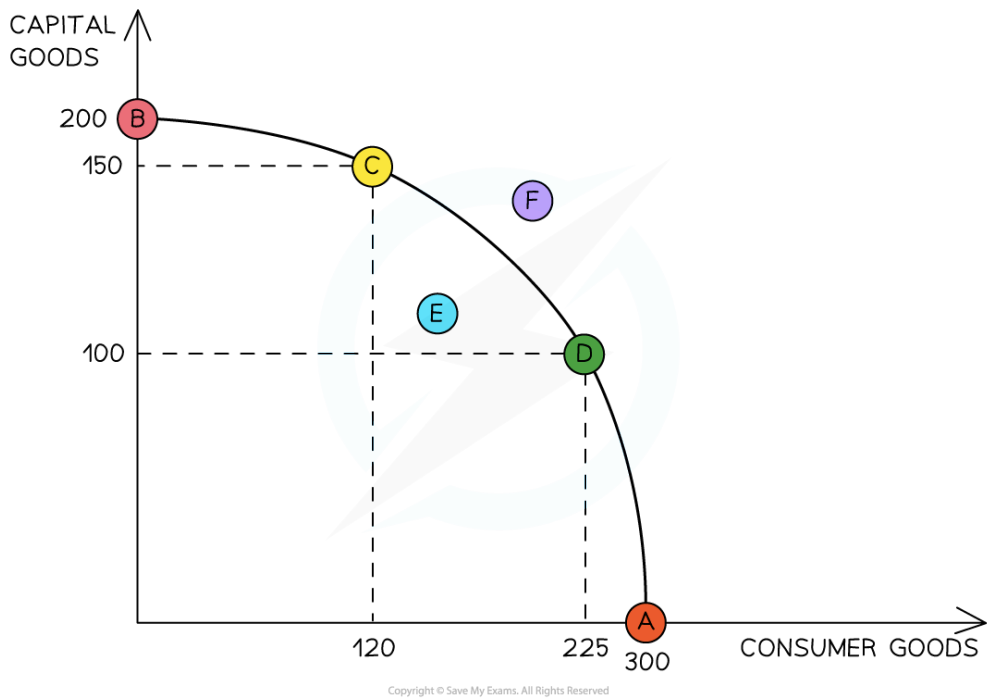
2. Economic decline

- **Economic decline** occurs when there is any impact on an economy that **reduces the quantity or quality** of the available factors of production
 - One example of how this may happen is to consider how the Japanese tsunami of 2011 devastated the **production possibilities** of Japan for many years. It **shifted the PPC inward**, resulting in **economic decline**



Efficient and inefficient points

- The PPC depicts efficiency, inefficiency, attainable and unattainable production



A PPC for an economy demonstrating the use of its resources to produce capital or consumer goods

- Producing at any point on the curve represents **productive efficiency**
- Any point inside the curve represents **inefficiency** (point E)
- Using the current level of resources available, **attainable production** is any point on or inside the curve and any point outside the curve is unattainable (point F)

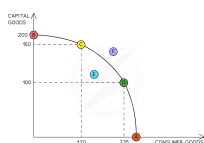
Productive and allocative efficiency on a PPC

- **Efficiency** is a key concept in economics
- Economists generally identify **two types of efficiency**
 - Productive and allocative efficiency

Type of efficiency	Explanation
Productive efficiency	▪ Producing at any point on the PPC represents productive efficiency, as it is the maximum output that can be produced from the available factors of production to produce goods and services ▪ There is no wastage of scarce resources

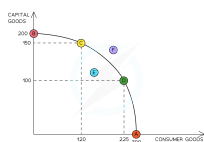


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- Any point inside the curve represents **inefficiency** (point E)
 - It does not use all possible combinations of factors of production to produce goods and services

Allocative efficiency



- Makes the best possible use of **scarce resources** to produce the combinations of goods and services that are **optimal for society**, thus minimising resource waste
- Not all points on the PPC are allocatively efficient
- This is because more of one good or service cannot be produced without reducing output of another good/service
- Any change to the **allocation of resources** in this market will make either the consumer or producer worse off (excess demand or excess supply would occur)