

Exercise walk-through

1.5

Production possibility curves

A-Level Economics

Classify combinations using a stated frontier

A **PPC** shows maximum feasible combinations for given resources and technology. This illustrative frontier joins these combinations:

Point	Food (tonnes/day)	Machines (units/day)
A	20	0
B	16	4
C	10	8
D	0	12

Use the frontier, not just the word efficient

Classify E=(8 food,4 machines) and F=(15 food,8 machines). Can the economy make more food at E without giving up machines? Does choosing C prove that society prefers its product mix?

A production limit does not choose society's preferred mix

E is inside: at four machines the frontier permits 16 tonnes of food, exceeding E's eight. F is outside: at eight machines the maximum food is 10 tonnes, below F's 15.

C is on the frontier: producing more of one good requires giving up some of the other. It is **efficient** in production, not proof that this mix is the one society values most.

Moving E to B uses spare capacity to add food without losing machines. That possibility does not mean every inside-point decision is costless: scarce staff, funds or time may still have a next-best use.

The **trade-off** along B to C is six tonnes of food for four more machines. That is an average opportunity cost of 1.5 tonnes per extra machine over this interval.

Reading a production possibility curve

On the curve

Production is efficient for the given resources and technology; more of one good costs some of the other.

Inside it

Unused capacity or waste: more output may be feasible without sacrificing the other plotted good.

Outward shift

Growth. It happens with more resources, or better ones – new **technology**, a bigger or more skilled workforce.

Inward shift

War or disaster can move the curve inward – **economic decline**.

The curve is a picture of opportunity cost: its slope *is* what one more unit of this good costs in units of that one.

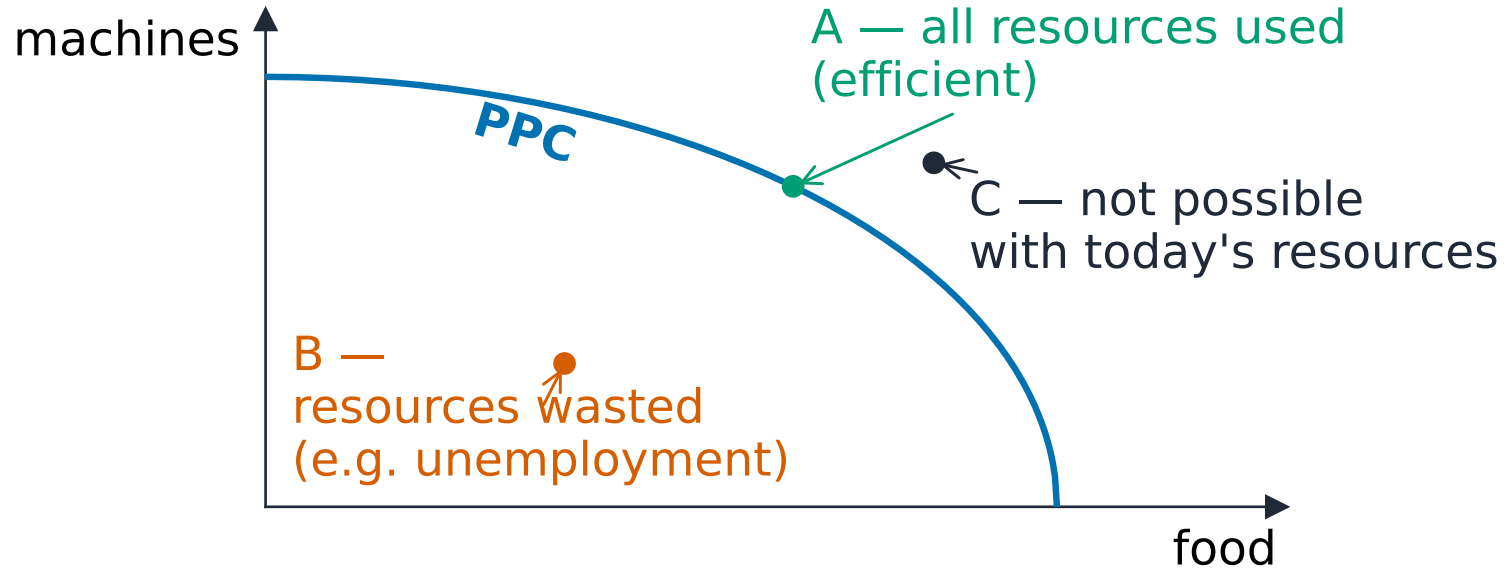
Worked example – why the PPC is bowed outwards

Why is a production possibility curve usually drawn rather than as a straight line?

- a straight line means a **constant** opportunity cost
- but factors are **not equally suited** to both uses
- move the best-suited first, so later units cost **more**
- so the curve steepens: **increasing opportunity cost**

The shape *is* the economics: a straight PPC would say a farmer and a machinist are interchangeable.

Production possibility curve, in detail



on = efficient · inside = inefficient · outside = unattainable

The **PPC**

shows the most of two goods an economy can make.

Exercises 2.1-2.3

2.1 State what a point **inside** the PPC shows.

[1]

2.2 Define the term *production possibility curve*.

[2]

2.3 State two causes of an outward shift of the PPC.

[2]

Exercises 2.1-2.3

2.1 State what a point **inside** the PPC shows.

[1]

2.1

- that resources are not fully or efficiently used (e.g. unemployment) – the economy could produce more (1)

2.2 Define the term *production possibility curve*.

[2]

2.2

- a curve showing the maximum combinations of two goods an economy can produce when all its resources are fully and efficiently used (2 for a clear definition; 1 for a partial idea)

2.3 State two causes of an outward shift of the PPC.

[2]

2.3

- any two of: more resources; better resources / new technology; a larger or more skilled workforce (1 + 1)

Exercises 3.1-3.2

3.1 A point **outside** a country's PPC represents output that is:

[1]

☐

A efficient

B wasteful, with unemployment

C not possible with current resources

D the optimum allocation

3.2 Using a PPC diagram, explain the opportunity cost of a country producing more capital goods.

[8]

Exercises 3.1·3.2

3.1 A point **outside** a country's PPC represents output that is:

[1]

☐

A efficient

B wasteful, with unemployment

C not possible with current resources

D the optimum allocation

3.1 C

- Outside the PPC is unattainable with current resources

3.2 Using a PPC diagram, explain the opportunity cost of a country producing more capital goods.

[8]

3.2

- [8] AO1 1–2 (define PPC/opportunity cost) + **AO3 diagram up to 4** (correctly labelled PPC, axes capital goods vs consumer goods, a movement along the curve) + AO2/AO3 up to 2 – producing more capital goods means moving along the curve, so fewer consumer goods can be made now; that forgone output is the opportunity cost

Exercise 3.3

3.3 Discuss whether producing more capital goods today is always the best choice for an economy. [12]

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3.3

- [12] AO1/AO2/AO3 up to 8 + AO4 up to 4. **For:** more capital goods raise future productive capacity
- the PPC shifts out further
- faster growth and more of both goods later. **Against:** fewer consumer goods now means lower living standards today, which may be hard on a poor population. Judgement: investing in capital goods aids long-run growth, but the best balance depends on current living standards and how urgently people need consumer goods now