

2023 H2 A Level Paper 2 Question 1

The amount of goods and services that can be produced in an economy is insufficient to satisfy the wants of its population. This leads to the economic consequences of scarcity and choice.

- (a) Explain how a production possibility curve can be used to show the concepts of underutilisation of economic resources and opportunity cost. [10]
- (b) Discuss whether it is possible to increase the total production of goods and services in an economy without resulting in environmental damage or other unintended consequences. [15]

Part (a) (Question Analysis)

Approach	Command Word	Explain how – Explain the process
	Start point	N.A.
	End Point	N.A.
Content and Context	Content	<ul style="list-style-type: none">• Production possibility curve (PPC)• Utilisation of resources• Opportunity cost
	Context	Generic

Suggested Response

Introduction

The production possibility curve (PPC) is a curve that shows all the possible combinations of the maximum quantity of two goods that a country can produce within a specified period of time with all its resources fully and efficiently employed at a given state of technology.

Requirement (1) – Explain how PPC illustrates underutilisation of resources

- The assumptions of the PPC are:
 - All available resources (labour, land, capital and entrepreneurship) are used to produce only two goods – e.g. consumer goods and capital goods.
 - Within the given time period, the quantity and quality of resources remain the same.
 - Resources are fully and efficiently employed to produce the goods.
 - Within the given time period, the level of technology remains the same.

Units of consumer goods

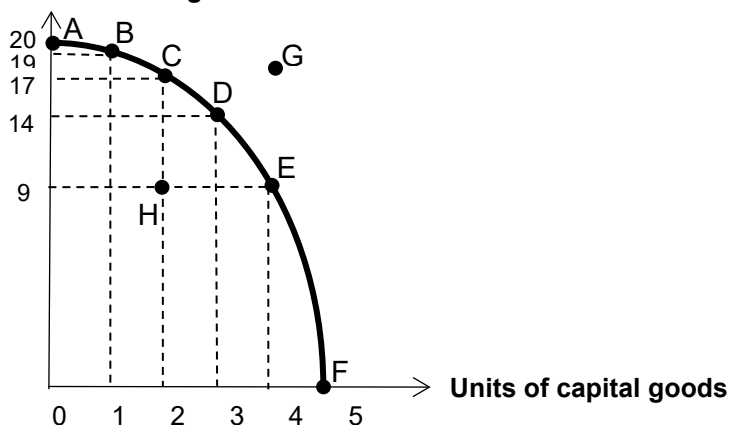


Figure 1: Production Possibility Curve (PPC)

- **Point H, which is within the PPC, illustrates underutilisation of available resources,** since more consumer and capital goods could have been produced by utilising more of the available resources. Hence, an inability to achieve the maximum possible level of production of both consumer and capital goods.

Requirement (2) – Explain how PPC illustrates opportunity cost

- The PPC can illustrate the concepts of scarcity, choice and opportunity cost. In view of scarcity, economic agents have to make choices on the allocation of resources. When choices are made, opportunity costs are incurred as the production or consumption of other goods and services will be forgone.
- Opportunity cost is defined as **the value of the next best alternative forgone**. It is **reflected by the downward sloping PPC**.
- With reference to Figure 1, assuming that the economy was initially producing on point D where the limited amount of resources has been fully and efficiently employed. If the economy chooses to produce an additional unit of capital good (e.g. 4 units instead of 3 units of capital goods), it will need to **give up** some units of consumer goods (i.e. produce 9 units instead of 14 units of consumer goods). **This is represented by a movement along the PPC from point D to E.**
- Likewise, if the economy chooses to produce an additional unit of consumer good, it has to **give up** some units of capital goods.
- **Additionally, the concave shape of the PPC to the origin illustrates increasing opportunity cost.**
- The opportunity cost of the 1st unit of capital good is 1 unit of consumer good. To produce the 2nd unit of capital good, 2 units of consumer goods had to be forgone. The 3rd unit of capital good requires sacrificing 3 units of consumer goods. Hence, the opportunity cost increases as we produce additional units of capital goods. In other words, starting from point A, for every subsequent unit of resource that is reallocated from the production of consumer goods to capital goods, the opportunity cost of producing capital goods rises, i.e., marginal cost increases.
- This is due to resources not being homogenous.

Conclusion

Therefore, the PPC can illustrate both underutilisation of resources and opportunity cost.

Mark Scheme

Band	Knowledge, Understanding, Application, Analysis	Marks
L3	For an answer that shows well-developed explanation of the concepts of underutilisation of resources and opportunity costs, using the PPC.	8-10
L2	For an answer that shows under-developed explanation of the concepts of underutilisation of resources and opportunity costs, using the PPC. <ul style="list-style-type: none"> • lacks depth of analysis (i.e., limited effective use of relevant economic analysis or gaps in diagrammatic analysis) Or, for an answer that is lopsided (i.e. only explained either underutilisation of resources or opportunity cost).	5-7
L1	For an answer that shows limited knowledge of the PPC. <ul style="list-style-type: none"> • with listing of points, unexplained statements, or descriptive response • major conceptual errors 	1-4

- (b) Discuss whether it is possible to increase the total production of goods and services in an economy without resulting in environmental damage or other unintended consequences. [15]

Part (b) (Question Analysis)

Approach	Command Word	Discuss whether – balanced answer with evaluation
	Start point	Increase in total production of goods and services in an economy
	End Point	Unintended consequences (including environmental damage)
Content and Context	Content	<ul style="list-style-type: none"> • Production possibility curve (PPC) • Economic growth (Actual, Potential, Sustainable)
	Context	Generic

Suggested Response

Introduction

- The increase in total production of goods and services in an economy can be referred to as actual economic growth.
- This essay will discuss whether it is possible to achieve actual economic growth without unintended consequences such as environmental damage.

Requirement (1) – Increase in the production of goods and services will result in environmental damage or other unintended consequences

- Since the environment provides the factors of production that generate economic growth, the **depletion of these resources** (i.e. minerals, forests) will not only mean less resources for future generations to utilise, but also causes climate change which is irreversible, lowering the non-material standard of living (compromising health conditions eg risk of lung cancer, respiratory disease) of citizens today as well as on future generations.
- Economic development usually brings about **third-party effects** to economic agents that are not involved in the transaction. Economic development which entails increased factory production of goods and services will produce green-house gases that leads to the thinning of the ozone layer and hence permanent damage to the climate, affecting everyone else that were not part of the transaction (long term medical costs relating to skin cancer, lung cancer, respiratory disease, etc). The overproduction of the related goods and services and hence overallocation of resources leads to a deadweight loss to society.

Other possible unintended consequences:

- *Income inequality and inequity*
- *Structural unemployment*
- *Inflation*
- *Worsening balance of trade*

Intermediate Evaluation (1)

- The **extent** of environmental damage depends on the **type of production**. Production of certain goods such as petroleum-related goods will lead to more environmental damage than production of services such as hospitality and healthcare.

Requirement (2) – It is possible to achieve actual economic growth without unintended consequences such as environmental damage

- On the other hand, it is possible to increase production without unintended consequences.
- We typically use the AS-AS graph to show Actual Growth + Potential Growth = Sustained Growth. However, we use the PPC approach here as this question is within Section A. Also Qn 4b is a tad similar and anchors on AD-AS.
- **If an economy was initially underutilising its available resources, it can achieve actual growth without unintended consequences.** Actual growth happens when the economy is initially not operating on the PPC (with reference to Figure 2), but within it, e.g., at point A. When more of the idle resources are utilised, the output produced increases (at point B, there is more of both consumer goods and capital goods, compared to point A), contributing to actual economic growth.

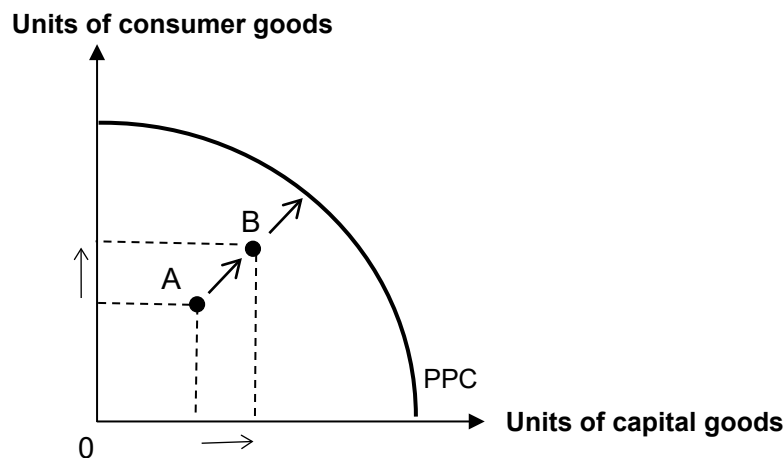


Figure 2: Actual growth as represented by movement within the PPC

- **Sustainable growth** refers to the rate of economic growth that can be maintained without creating other significant economic problems such as depleted resources and environmental problems for future generations.
- In other words, an economy can achieve both actual growth, potential growth and environmental sustainability.
- For example, governments can subsidise research and development on the production of sustainable energy and alternatives, which will raise the state of technology in the economy. This results in an outward shift of PPC from PPC_1 to PPC_2 , which represents potential growth, in Figure 3.

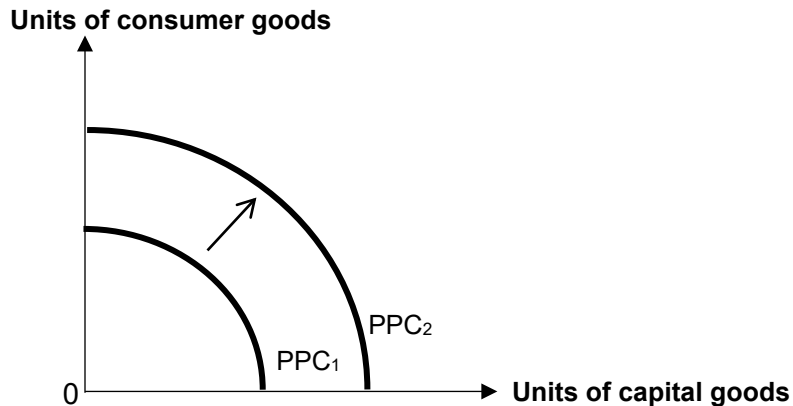


Figure 3: Outward shift of the PPC

As a result, the economy can increase total production without increasing the use of non-sustainable resources, thereby not causing any environmental damage.

Intermediate Evaluation (2)

- It is unlikely for **developed economies** like Singapore to have much or any spare capacity, so it will take very intentional policies by the government to focus on environmental sustainability issues in its pursuit for growth.

Summative Evaluation

- Stand:** In conclusion, while it is rather impossible for economies to increase total production without unintended consequences, it is possible for them to **mitigate any negative consequences through political will and government policies**.
- Justification:** For example, income inequality and structural unemployment which arise from increase in total production of more knowledge and skills-based goods and services can be overcome with income redistribution policies and supply-side policies.
- Recommendation:** Governments can also choose which type of production to increase which has fewer unintended consequences, as well as the rate of actual growth so as to pace out the rate of damage (if any).

Mark Scheme

Band	Knowledge, Understanding, Application, Analysis	Marks
L3	For an answer that shows well-developed and well-balanced explanation of how an economy's increase in total production can lead to, and not lead to unintended consequences. <ul style="list-style-type: none"> well-supported with diagrammatic analysis (PPC diagram) 	8 – 10
L2	For an answer that shows under-developed explanation (i.e. limited effective use of relevant economic analysis or gaps in diagrammatic analysis); Or one-sided explanation of how an economy's increase in total production can lead to, and not lead to unintended consequences.	5 – 7

L1	For an answer that shows limited knowledge of increase in total production and possible unintended consequences. <ul style="list-style-type: none"> • with listing of points, unexplained statements, or descriptive response • major conceptual errors • Smattering of points 	1 – 4
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Band	Evaluation	Marks
E3	For an answer that arrives at a well-explained evaluative judgement about the extent to which an increase in total production will lead to unintended consequences, with a summative conclusion about the likelihood of such unintended consequences occurring.	4 – 5
E2	For an answer that make some attempts at a judgement about the extent to which an increase in total production will lead to unintended consequences.	2 – 3
E1	For an unsupported statement about the extent to which an increase in total production will lead to unintended consequences.	1