Economics

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Preface

About

These notes review the Singapore-Cambridge GCE A-Level H1 Economics (8843) syllabus.

Candidates taking this subject sit for the H1 Economics Paper 1, which comprises of 2 case studies, each consisting of 2 to 3 pages of data presented in textual, numerical or graphical form. Each case study will present contemporary multifaceted economic issues or policies, which may be from one or more themes in the syllabus. The data for each case study will be followed by 7 to 8 part-questions, including sub-parts. These questions will require candidates to apply relevant economic concepts, theories and principles in analysing, synthesising and evaluating economic issues, perspectives or policies, with reference to the data provided. About 16 marks of each set of case study questions will be allocated to data response questions, and about 24 marks will be for higher-order questions.

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Part I.

The Central Economic Problem

1. Scarcity, Choice and Resource Allocation

1.1. Scarcity

Definition 1.1. ***Scarcity*** is the situation of limited resources in relation to unlimited wants.

Definition 1.2. ***Resources*** are the inputs used in the production of the things we want. The resources used in production are called **factors of production**.

The total quantity of all resources an economy has at any one point determines the maximum possible output that economy can produce. Resources are limited because the quantity of factors of production are always fixed at any given period of time.

Factors of production can broadly be classified into 4 types:

- **Capital**
  - Man-made factors used in the production of other goods and services.
  - Types
    - Fixed capital – machinery and buildings
    - Infrastructure AKA social overhead capital – roads & rail network, telecommunication network, air & sea ports, etc.
- **Entrepreneurship**
  - The factor of production that assumes the risk and faces the uncertainty of combining the other 3 resources and engaging in production.
- **Land**
  - Encompasses all the natural resources that are available from nature, and can be renewable or non-renewable. (e.g. minerals, trees, resources that can be harvested from oceans and even the climate that is favourable to grow certain crops in)
- **Labour**
  - Includes all the productive contributions made by the physical and mental human effort.
  - The quantity of labour available for an economy consists of all those who are willing and able to work.

Definition 1.3. ***Goods*** are defined as all things from which individuals derive satisfaction. ***Economic goods*** are scarce goods for which the quantity demanded exceeds the quantity supplied at zero price.

Definition 1.4. ***Services*** are tasks that are performed for someone else. (e.g. laundry, internet access, teaching)

1.2. Resource Allocation

In a world of scarcity, the society, as a whole, is limited by the amount of resources it has to produce the goods and services to satisfy all these wants. **Choices** are hence inevitable, and must be made in the allocation of resources between different uses.

Fundamental questions of resource allocation:

- **What** and **how much** to produce?
- **How** to produce?
- **For whom** to produce?

1.3. Opportunity Cost

Definition 1.5. The ***opportunity cost*** of any activity is the value of the next-best alternative forgone.

The scarcity of resources puts a limit on how much goods and services the economy can produce to satisfy wants and contribute to the people's standard of living. Every time we make a choice, we are trading off the use of that resource for one or more alternative uses. The extent of the trade off is represented by the opportunity cost.

1.4. Production Possibility Curve (PPC)

Definition 1.6. The ***production possibility curve (PPC)*** of the production possibility frontier (PPF) is a graph that shows the maximum possible output combinations that the economy can produce in a given period of time (e.g. a year).

The PPC is a boundary or frontier because it shows the maximum production possible. It separates the attainable combination of goods from the unattainable.

Assumptions

The relevant assumptions of the PPC model include:

- 2 goods
- Resources are fully and efficiently employed.
- Within a given period of time, the quantity and quality of the resources remain fixed. Technology also remains constant.

Graphical Illustration

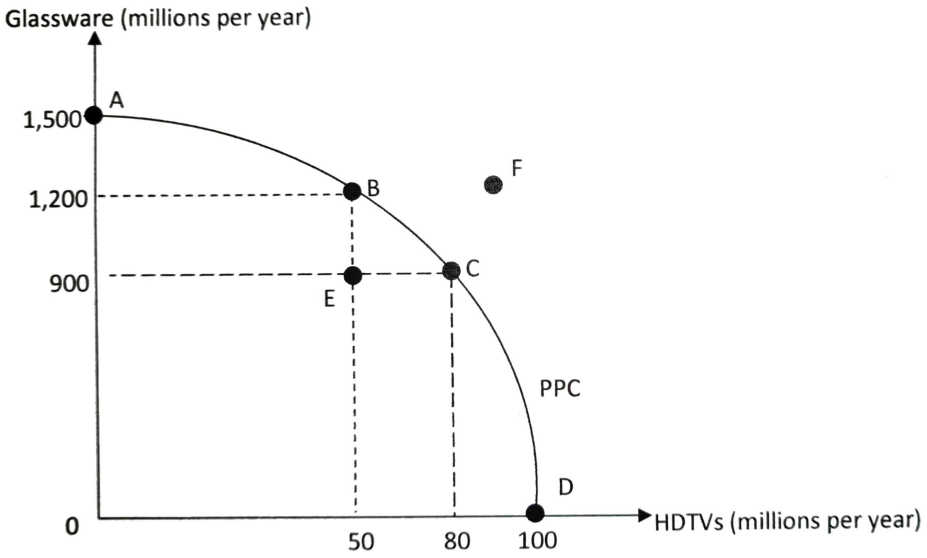

Figure 1.1.: Production Possibility Curve

Interpretation

Figure 1.1 shows the various maximum possible output combinations of glassware and HDTVs that can be produced with the available factors of production and production technology in a given time period of 1 year.

Represented by point A on the PPC, if all the resources were devoted solely to the production of glassware, the country produces 1500 million units of glassware (output of HDTVs = 0). Similarly, represented by point D, if all the resources were devoted solely to the production of HDTVs, the country produces 100 million units of HDTVs (output of glassware = 0).

In between points A and D are the maximum possible combinations of output when the resources are shared between the 2 industries. For example, at point B on the PPC, the country produces 1200 million units of glassware and 50 million units of HDTVs.

What the PPC tells us about scarcity, choice and opportunity cost

Scarcity

Scarcity is illustrated on the PPC as only combinations of goods within and on the PPC are attainable. Points beyond the PPC are unattainable due to limited resources.

- Points ***on*** the PPF (A, B, C, D)
  - Production can take place on the frontier with the economy producing the maximum possible output only when:
    - Resources are fully-utilised (fully-employed) and/or
    - There is productive efficiency – using its given resources to produce the maximum possible output. It is hence impossible to increase the production of one good without reducing the production of the other.

- Points ***within*** the PPF (E)
  - Combinations within the frontier imply that resources are:
    - Under-utilised (under-employed/unemployed) and/or
    - Misallocated and the economy is productively inefficient – at point E, output is not maximised. It is hence possible to increase the production of one good without reducing the production of the other (moving from point E to any point on the segment of the PPC bounded by points B and C).
- Points ***outside*** the PPC (F)
  - Combinations beyond the boundary of the PPC are unattainable with the economy's given resources and current state of technology.

Choice

Choice is illustrated via the choice between the different points on the PPC, depending on the economy's relative preference for the two goods.

Opportunity Cost

Opportunity cost is illustrated as the trade-off between the 2 goods and computed as the slope of the PPC.

The PPC is ***downward sloping***, illustrating the fact that scarce resources have alternative uses and the trade-off as we move resources from one industry to the other.

The PPC is drawn ***concave to the origin*** (bowed outwards). The gradient of the PPC increases in steepness as we move along the horizontal axis, indicating that to produce an additional unit of HDTV, an increasing amount of glassware has to be sacrificed.

The ***law of increasing relative cost/law of increasing opportunity cost*** states that when society takes more resources and applies them to the production of any specific good, the opportunity cost increases for each additional unit produced.

The reason why the law of increasing relative cost works is because certain resources are better suited for producing some goods than they are for other goods. Generally, resources are not perfectly adaptable for alternative uses.

- For instance, to increase the production of HDTV, resources have to be diverted away from the production of glassware. Initially, producers will draw on the resources that are most suited to the production of HDTV and least suited to the production of glassware (e.g. workers with engineering and technical training). Hence, the economy does not have to give up that many units of glassware to produce the first batch of HDTVs.
- However, if the production of HDTV continues to increase, firms will have to draw on the remaining pool of resources, which are less suited to the production of HDTV. Hence, more resources will be required in the production of the next batch of HDTVs, resulting in a greater loss in glassware production.
- Eventually, firms will have to draw on the resources best suited to glassware production and least suited to HDTV production such as the artisans, professional glass blowers and designers. The loss of output in glassware production will hence be the greatest in producing the last batch of HDTVs.

Effect of a Recession on the PPC

When firms experience falling demand for their goods and services, they scale back production and lay off workers. Among the workers who are retrenched, some are able to find another job, though not necessarily their ideal job (e.g. accepting a position below what they are qualified to do/going on part-time) – under-employed workers. Others who cannot find alternative employment remain unemployed.

This is represented by a movement from a point on/close to the PPC to a point within the PPC. Referring to Figure 1.2, this is depicted as a movement from point A on the PPC to point B, a point within the PPC. ***Actual output falls but potential output does not.*** Resources do not get destroyed and technology does not regress. The potential to produce has, therefore, not diminished. The situation is just one of the resources not being put to use. Once the economy recovers from the recession, resources will be re-employed to produce goods and services again.

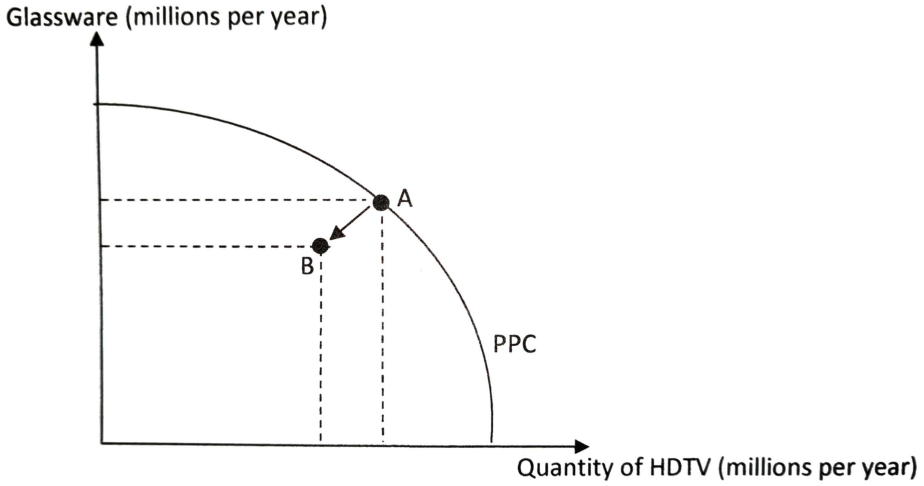

Figure 1.2.: Effect of a Recession

Effect of Changes in the Quantity and/or Quality of Resources & Technology

Take the enhancement of programmes such as the Productivity Solutions Grant (PSG) and the SkillsFuture Credit Top-up as an example.

Firms are able to tap on the government grant to adapt "productivity solutions" (e.g. purchase robots). In doing so, they are in fact adding to the economy's capital stock – increasing factor quantity, capital being 1 of the 4 factors of production. The use of robots also has a productivity enhancing effect, enabling more output to be produced per worker. Together, the increase in factor quantity and quality bring about an expansion in the economy's productive capacity, shifting the entire PPC outwards. The new efficient frontier is now PPC_1 , with points inside PPC_1 as inefficient and points outside PPC_1 unattainable. Initial efficient points on PPC_0 are now regarded as inefficient.

However, there may also be a pivotal shift in the PPC. Assuming that a technological improvement has occurred in the glassware industry without any direct impact on HDTV, there will be a pivotal shift of the PPC, with the maximum possible output for glassware increasing and that for HDTVs remaining the same.

In any case, when the PPC shifts outwards as a result of an increase in the quantity of resources, an improvement in the quality of resources and the advancement in technology, potential economic growth is said to have taken place.

2. Decision-making Process of Economic Agents

The scarcity of resources necessitates choice and leads to decision making by economic agents in various economic processes – production, consumption, distribution.

> **Definition 2.1.** ***Economic process*** refers to activities through which goods and services aimed at satisfying human needs and wants are produced, distributed and used.

One of the fundamental characteristics of activities defined as economic processes is that they involve relations between various agents.

> **Definition 2.2.** ***Economic agent*** refers to a person or legal entity that plays an active role in an economic process.

The groups of economic agents include:

- **Households**, as consumers of goods and services
- **Firms**, as producers of goods and services intended for sale to generate profit
- **Government**, which in addition to fulfilling its political responsibilities and role of economic regulation, produces principally non-market services (possibly goods) for individual or collective consumption and redistributes income and wealth

These agents interact with each other in a system to determine the outcome of resource allocation.

Regardless of the group of economic agent, the decision-making process includes the same key aspects, as follows.

2.1. Rationality Assumption

Individuals act as if motivated by self-interest and respond predictably to opportunities for gain, making use of available information. The rationality assumption of economics is simply stated as we assume that individuals do not intentionally make decisions that would leave them worse off.

This requires individuals to possess:

- Unlimited information-processing capabilities – having the ability to weigh the benefits and costs of possible decisions.
- Unbounded willpower (i.e. complete self-control) – having the self-control to make right choices consistent with their goals.

2.2. Goal Orientation

Rational decisions are goal-oriented – decisions made are consistent with the goal of the economic agent:

- Consumers are assumed to act in a way such that their utility is maximised.
- Firms seek to maximise their profits/minimise their losses.
- Governments pursue a range of policy objectives:
  - Microeconomic objectives: efficiency and equity
  - Macroeconomic objectives: inclusive and sustainable growth, full employment/low unemployment and price stability
  - Ultimate goal: improve the standard of living

2.3. Constraints

Due to the fundamental problem of scarcity, choices have to be made. Hence, economic agents consider the constraints that they are currently experiencing to determine the choices available to them.

The following are sources of constraints.

Budget or the Availability of Funds

For **consumers**, not all combinations of goods and services they desire are available as choices. As consumers strive for the highest level of utility, they face budget constraints. With limited income, they need to decide how best to allocate their budget to maximise their utility.

For **governments**, not all projects that would improve society's welfare is available. Governments too face budget constraints. Government spending is constrained by the amount of tax revenue it collects. While the government, like firms, can take on loans, there is a limit to how much it is able to borrow without pushing up interest rates and adding to debt, financing burden that would undermine future living standards. The government has to decide how to allocate its budget to competing social, economic and security needs.

Government Regulations

Individuals and organisations are bounded by the laws of the land. For **consumers**, government regulations such as age limit on tobacco and alcohol consumption, bans or legislation on certain types of drugs, etc. would determine what individuals can or cannot purchase.

Political Support

Government policy-making is subjected to the political process – government policies need political support.

2.4. Information

2.5. Weighing the Benefits and Costs

2.6. Intended and Unintended Consequences

2.7. Perspectives

2.8. Trade-offs

2.9. Dynamic Nature of Decision-making

2.10. Cognitive Biases