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.

Acknowledgements

These notes are largely adapted from the notes provided by Dunman High School's Economics Department.

Contents

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

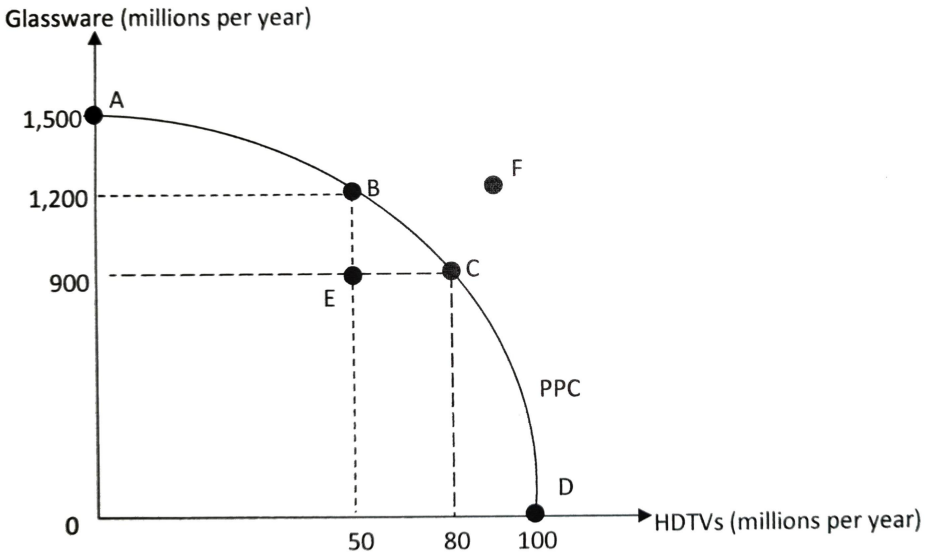

Figure 1.1.: Production Possibility Curve

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.

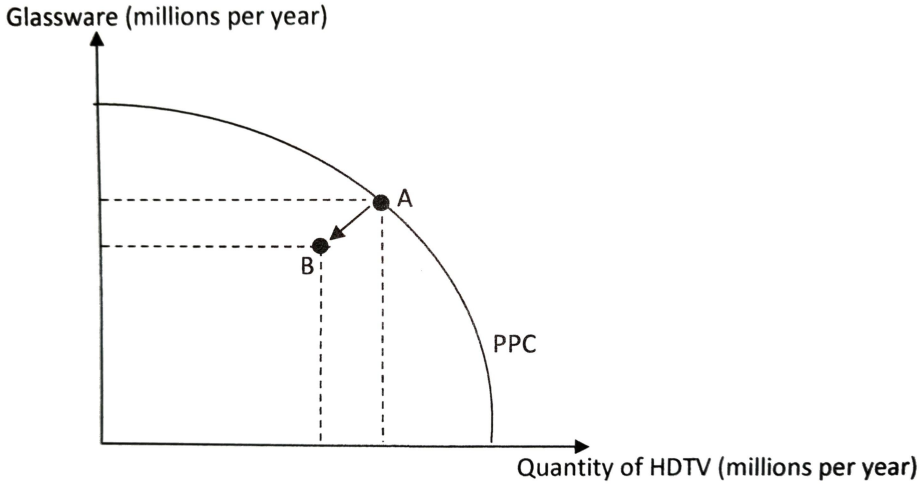

Figure 1.2.: Effect of a Recession

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.

These conditions have come under criticism (behavioural economics – cognitive biases).

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

For economic agents to make good decisions, they need to have the relevant information, including information on:

- All options/alternatives
- Constraints – separate the feasible from the unfeasible
- Benefits and costs of each option

The better the quality of the information – accurate, complete, timely – the better the decision-making in terms of making the highest net benefit.

In reality, quality information, rather than being readily available, is often difficult and costly to obtain. For instance, a consumer, in deciding the best brand and model of laptop to purchase, needs to devote time to research on the brands and models that are available in the market, the specifications of each model, the prices offered by various merchants, etc. In other words, expending time to gather information to make better decisions is part of the cost of decision-making. Apply the marginalist principle, economic agents will continue to source for information only for as long as the expected marginal benefit of data gathering $\geq$ expected marginal cost.

2.5. Weighing the Benefits and Costs

Having narrowed down the options/alternatives to those that are permitted within the constraints, economic agents weigh the benefits and costs of each cost of action to arrive at the best outcome.

Marginalist Principle

Rational consumers and producers, driven by their self-interest (utility/profit maximisation), would consume/produce up to the point where

> marginal private benefit (MPB) = marginal private cost (MPC)

of the last unit consumed/produced.

Application to Consumers

The aim of rational consumers is to maximise their utility/satisfaction from the consumption of goods and services within their given budgets. Referring to Figure 2.1, the rational consumer will consume up to q_e units where, for the last unit consumed,

> marginal utility/consumer's MPB = price/consumer's MPC

At a quantity below q_e, say at q_1, the last unit consumed brings the consumer more benefit/utility (aq_1) than it costs the consumer (bq_1). The rational consumer should hence increase consumption to increase net utility.

At a quantity below above q_e, say at q_2, the last unit consumed brings the consumer less benefit/utility (dq_2) than it costs the consumer (cq_2). The rational consumer should hence decrease consumption to increase net utility.

At q_e, where marginal utility = price, the last unit consumed brings the consumer as much utility as it costs the consumer in terms of the value of the alternative good forgone. At this point, the consumer cannot increase utility further by increasing/decreasing the units consumed – utility is maximised.

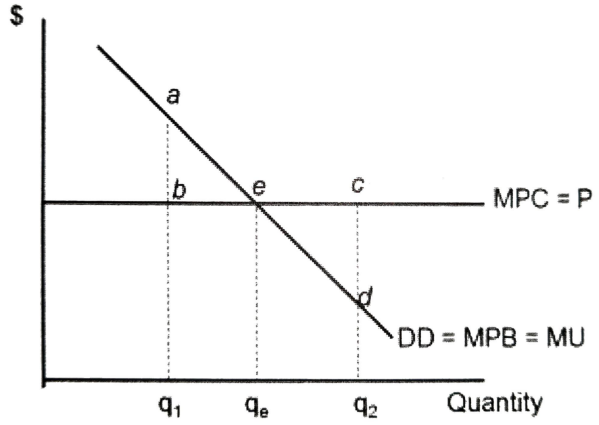

Figure 2.1.: Rational Decision-making at the Individual Consumer Level

Application to Governments

Governments, in pursuit of maximising society's net welfare, would steer consumption/production up to the point where

> marginal social benefit (MSB) = marginal social cost (MSC)

of the last unit consumed/produced.

Referencing Figure 2.2:

At output below Q_e, say at Q_1, the last unit consumed/produced adds more to society's benefit (aQ_1) than it does to society's cost (bQ_1). Society's welfare can be increased by raising consumption/production from Q_1 to Q_e, as it would add as much as aeQ_eQ_1 to society's benefit but only beQ_eQ_1 to society's cost, yielding net social benefit/economic welfare of abe. From another perspective, restricting consumption/production to Q_1 would mean forfeiting society's economic welfare/welfare loss of abe.

At output above Q_e, say at Q_2, the last unit consumed/produced adds more to society's cost (cQ_2) than it does to society's benefit (dQ_2). Society's welfare can be increased by lowering consumption/production from Q_2 to Q_e as it would create as much as ecQ_2Q_e of cost savings for society while only forgoing edQ_2Q_e of social benefit, avoiding a potential welfare loss of cde.

At Q_e, marginal social cost = marginal social benefit = eQ_e. At this point, it is not possible to increase society's net benefit/economic welfare further by adjusting the level of output. This is the point of optimisation where society's economic welfare is maximised.

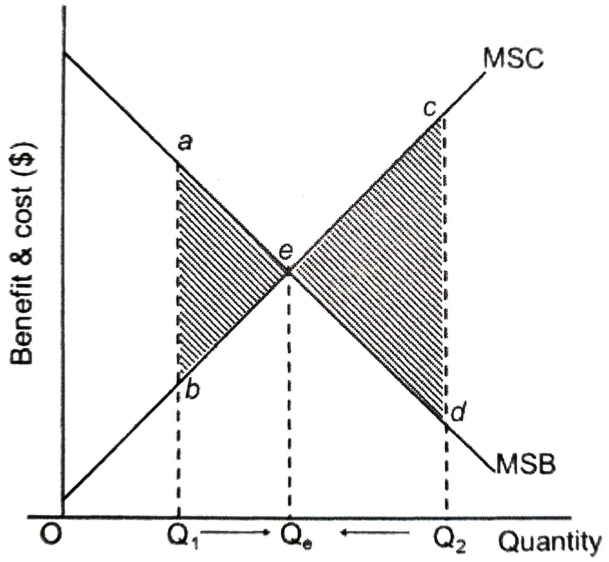

Figure 2.2.: Rational Decision-making by the Government

2.6. Intended and Unintended Consequences

The decisions, once made and acted upon, can give rise to both intended and unintended consequences. Take for example, the consideration of whether to raise tobacco taxes by the government:

- Intended benefits:
  - Achieve allocative efficiency (correcting the market failure) by tackling the over-consumption of tobacco arising from imperfect information and negative externality
  - Increase tax revenue for the government
- Unintended consequences:
  - Increase in smuggling of contraband cigarettes
  - Reduction in profits for cigarettes producers and retailers which could force them to lay-off their workers

Economic agents would have to anticipate and look out for the unintended consequences, in particular those which have a bearing on their own cost-benefit calculus. Having anticipated the unintended consequences, they are better able to put in place responses to:

- Take advantage of any positive impact and
- Manage the adverse impact

2.7. Perspectives

The decisions, once made and acted upon, will impact not only the economic agent making the decision, but also other economic agents. Whether the impact is positive or negative depends on the perspective. Economic decisions, once taken, will invariably create winners and losers. (Consider the consumer decision of purchasing a car and the government decision of raising tobacco taxes.)

2.8. Trade-offs

Decisions often involve trade-offs. The most straightforward trade-off arises from the **alternative uses of scarce resources and budget**. (e.g. a consumer, in deciding to spend on home development, has to cut back on foreign holidays; a government, in deciding to spend more on healthcare, has to cut back its support for the arts and culture).

Trade-offs can also be framed in terms of **competing goals**. (e.g. an individual, in choosing to enrol in training, could see a decline in current income in exchange for higher lifetime income and hence utility; a government, in raising tobacco taxes to correct market failure, could be achieving efficiency at the expense of equity (tobacco taxes are regressive)).

2.9. Dynamic Nature of Decision-making

Economic decisions are seldom one-off. At the **decision-making stage**, the economic agent is only able to make estimates of the benefit and cost of the decision – decisions are made based on **expected values** of benefits and costs.

Once the **decision is made**, the **actual** benefit and cost, including the **unintended** consequences, become apparent. External changes (e.g. changes in market conditions and the broader macroeconomy) that could also have occurred during this time would further change benefit and cost and generate unintended consequences.

The aims, constraints, costs, benefits, information and perspectives of economic agents can **change over time**. When changes occur, the economic decision undertaken by an agent may no longer be optimal, calling for a revisit of the decision-making process to ensure that the intended outcomes can be achieved.

The economic agent would then **review decisions** using the available data, revise their expected values of benefits and costs, and assess whether a course correction is necessary. At this point, the economic agent could realise that the initial decision has been regrettable or mistaken and change course, taking on a different decision or at least making adjustment to the original plan. The **cycle then repeats itself**.

2.10. Cognitive Biases

Behavioural economics reminds us that economic agents do not always behave rationally. They make "mistakes" in decision-making which may leave them worse-off and make them susceptible to manipulation.

Examples of Cognitive Biases

Loss Aversion

Human beings experience losses asymmetrically more severely than equivalent gains. This being the case, humans tend to prefer avoiding a loss over making an equivalent or greater gain.

Sunk Cost Fallacy

Thinking at the margin means to let the past go and to think forward to the **next unit** consumed/produced, the **next dollar** spent, the **next worker** hired, etc. It means to **ignore sunk costs**. Sunk costs are bygone and should not be taken into consideration when making purchasing decisions but often are.

Economic agents do now, however, always behave rationally. Sunk cost fallacy occurs when a person's decision is affected by sunk costs.

Salience Bias

Generally, humans avoid stressful and demanding cognitive strain, often making them vulnerable to many biases. This "laziness" and desire for cognitive ease can lead individuals to a world of irrationality where they make decisions according to elements that appear the most salient.

Applications

Design of Strategies/Policies

In the later themes, we will see how governments are able to harness cognitive biases to enhance the effectiveness of their policies to correct market failure and achieve a more efficient allocation of resources. (e.g. Nutri-Grade on the front of beverage packaging and on menus) If individuals are aware of their cognitive biases which are causing them to make bad decisions, they can design mechanisms to overcome them.

Part II.

Markets

3. Price Mechanism and its Functions

The price mechanism allocates scarce resources in the free market by performing the following 3 functions.

3.1. Signalling Function

Prices perform a signalling function. This means that market prices will adjust to demonstrate where resources are required and where they are not.

3.2. Incentive Function

Market prices act as an incentive to raise output/production because the supplier stands to make a higher profit. As a result, resources move out of these other industries into a more profitable one. When demand falls ceteris paribus, the price of the good falls, disincentivising production.

3.3. Rationing Function

The price mechanism rations out the goods produced according to the willingness and ability to pay. Buyers who desire the good and can afford to pay the price obtain the item and those who cannot, go without.

The price mechanism, through the signalling, incentive and rationing functions, answer the fundamental questions of resource allocation in the **product market**:

- What to produce?
- For whom to produce?
- How much to produce?

To understand how the price mechanism answers the question of "how to produce", we need to look at the **factor market**:

The price mechanism **signals** the relative abundance of certain factors of production and **incentivises** firms to employ these factors of production that are more abundant and economise on the use of those factors of production that are less abundant, answering the question of "How to produce?". (e.g. labour-intensive method of production VS capital-intensive method of production)

4. Demand and Supply Analysis and its Applications

4.1. Demand

Definition 4.1. ***Demand*** is defined as the quantity of a good/service that a consumer is both willing and able to buy at each possible price during a given time period, ceteris paribus.

The ***Marginalist Principle*** can be used to explain the points on the demand curve. When thinking at the margin, consumers assess the costs and benefits of consuming one more unit of a good or service, where:

- **Marginal benefit (MB)** is the additional benefit from consuming an additional unit of the good/service.
- **Marginal cost (MC)** is the additional cost from consuming an additional unit of the good/service, which is its price.

Consumers will maximise their utility only when they consume a good/service up to where **MB = MC**. This is because:

- When **MB > MC**, consuming an additional unit of good benefits the consumer more than it costs the consumer. Hence, the rational decision is to consume the next unit.
- When **MB < MC**, consuming an additional unit of good costs the consumer more than it benefits the consumer. Hence, the rational decision is to not consume the next unit.

Definition 4.2. ***Quantity demanded*** is defined as the quantity of a good/service that a consumer is willing and able to buy at a given price over a given period of time.

Quantity demanded is hence a particular point on the demand curve.

Market Demand

The market demand is the sum of the demands of all the consumers in the market.

4.2. Price Determinants of Demand

The ***Law of Demand*** states that in a given period of time, the quantity of a good demanded is inversely proportional to its price, ceteris paribus. This means that the higher the price of the good, ceteris paribus, the less the willingness and ability to buy the good and hence the smaller the quantity demanded. The converse is also true – at lower prices, a larger quantity is demanded.

The demand curve is generally downward sloping, reflecting the inverse relationship between the price of the good and the quantity demanded. Referring to Figure 4.1, as the price of the good declines from P_0 to P_1, the quantity demanded rises from Q_0 to Q_1. Graphically, this is represented as a movement from point A to point B along the same demand curve.

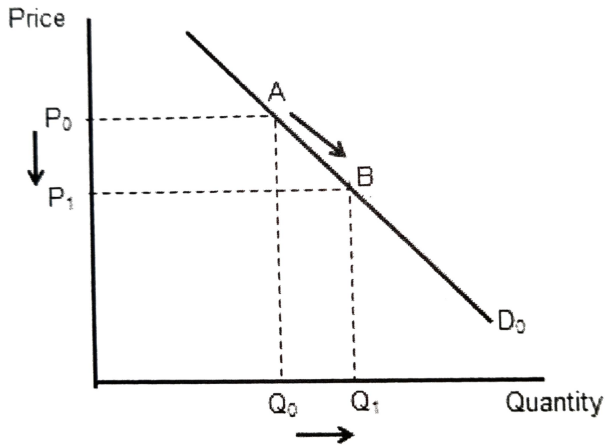

Figure 4.1.: Effect of a Price Change

4.3. Non-price Determinants of Demand

Level and Distribution of Income

> **Definition 4.3.** A ***normal good*** is a good whose demand rises as consumers' income rises, whereas an ***inferior good*** is a good whose demand falls as consumers' income rises.

As consumers' income rises, their ability to buy goods and services increases, and as rational utility maximisers, they will increase their demand for most goods. However, this is only true if we assume that the good is a normal good and not an inferior good.

Applying to the situation of a rise in income to the market for tea leaves and assuming tea leaves to be a normal good, an increase in income brings about an increase in the market demand. Referring to Figure 4.2, the increase in demand will lead to a rightward shift of the demand curve from D_0 to D_1, indicating an increase in the quantity demanded at each and every price. At the same price of P_0, the quantity demanded of the good by consumers increases from Q_0 to Q_1.

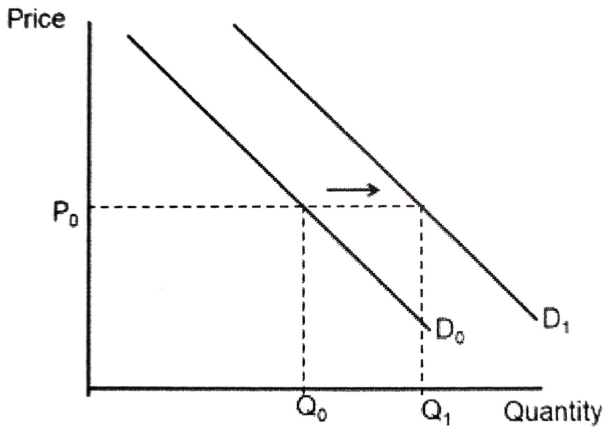

Figure 4.2.: Increase in Demand

Price and Availability of Related Goods

Substitutes

> **Definition 4.4.** ***Substitutes*** are defined as a pair of goods considered by consumers to be alternatives to each other, with the level of utility/satisfaction derived from consuming either good being relatively similar.

A pair of goods considered to be substitutes will be tea and coffee. When the **price** of coffee falls, ceteris paribus, the quantity demanded for it will rise as rational consumers who aim to maximise their utility with their given income will switch away from tea and buy coffee instead. Demand for tea will thus decrease. For this reason, substitute goods are also called goods in **competitive demand**.

Figures 4.1 and 4.3 depict the relationship between substitutes. Referring to Figure 4.1, when the price of coffee falls from P_0 to P_1, the quantity demanded increases from Q_0 to Q_1, represented by a movement from point A to point B along the same demand curve D_0. Referring to Figure 4.3, holding the price of tea constant at P_2, the switch to coffee causes the quantity demanded of tea to fall from Q_2 to Q_3, as represented by the leftward shift of the entire demand curve from D_2 to D_3.

Besides changes in the prices of substitutes, changes in the **availability** of substitutes will also change the demand of a good, vice versa. For example, now that there are other types of tea like chamomile, mint and rose available in the market, the demand for traditional tea leaves will fall, ceteris paribus.

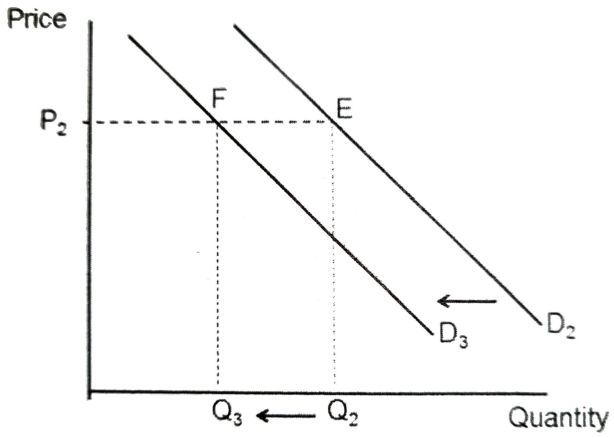

Figure 4.3.: Demand for Tea

Complementary Goods

Definition 4.5. ***Complementary goods*** are defined as a pair of goods consumed together to satisfy the same want.

A pair of goods commonly consumed together is car and petrol. When the **price** of cars rises, ceteris paribus, the potential car buyers would reconsider their decision to buy a car and some among them would choose not to buy one. The quantity demanded for cars will fall, and consequently the demand for petrol will also fall. Complementary goods are hence also called goods in **joint demand**.

Besides the changes in price of complements, changes in the **availability** of complements will also change the demand for a good, vice versa. For example, with the development and introduction of the many portable devices that use Secure Digital (SD) memory card for data storage, the demand for SD memory cards is likely to increase, ceteris paribus.

Derived Demand

The demand for one good occurs as a result of the demand for another. We do not want steel for itself. Rather, the demand for steel stems from the demand for the final product – cars. When the demand for cars rises, profit-motivated producers will want to step up the production of cars and thus increase the demand for inputs like steel. The demand for factor inputs is hence described as derived demand.

Joint demand – The 2 goods are bought by the **same** economic agent. (e.g. the buyer of motor vehicles is also the buyer of petrol)

Derived demand – The 2 goods are bought by 2 **different** economic agents. (e.g. household consumers demand for motor vehicles, creating the demand by car manufacturers for steel)

Taste and Preference

The more desirable consumers find a good, ceteris paribus, the more of it they will consume at any given price to maximise their utility. Changing tastes are affected by a variety of influences including advertisements. For example, with a successful advertising campaign that emphasises the health benefits of tea, consumers might be influenced to perceive that tea is superior to other beverages and would hence increase demand for tea, ceteris paribus.