

ECON1010 Revision

Chapters 1 & 2 – Introduction & Supply in Perfectly Competitive Market

Comparative Advantage & Basis for Trade

A **MODEL** is a simplified representation of reality.

One Agent Economy

Production Possibility Curve (PPC) – The PPC captures all maximum output possibilities for two (or more) goods, given a set of inputs (or resources) if inputs are used efficiently.

How to construct PPC:

1. Define axes
2. Look at extreme scenarios, where all resources are used to produce one good.
3. Look at possibilities for producing a combination of both goods.
4. Connect points found

Efficient Production Point – An Efficient Production point represents a combination of goods for which currently available resources **do not allow** an increase in the production of one good without a reduction in the production of the other. *All point on the PPC are efficient.*

Inefficient Production Point – an Inefficient Production Point represents a combination of goods for which currently available resources **allow** an increase in the production of one good without a reduction in the production of the other. *All points below and to the left of the PPC are inefficient.*

Attainable Production Point – An Attainable Production Point represents any combination of goods that **can** be produced with the currently available resources. *All points on or below the PPC are attainable.*

Unattainable Production Point – An Unattainable Production Point represents any combination of goods that **cannot** be produced with the currently available resources. *All points that lie outside the PPC are unattainable.*

Two Agent Economy

Absolute Advantage – An agent (or an economy) has an absolute advantage in a productive activity when he/she can carry on this activity with less resources than another agent.

Opportunity Cost – The Opportunity Cost of a given action is the value of the next best alternative to that particular action.

$$OC_{good\ x} = \frac{\text{loss in good } y}{\text{gain in good } x}$$

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It can also be found by finding the gradient of the PPC.

Comparative Advantage – An agent (or an economy) has a Comparative Advantage in a productive activity when he/she has a **lower opportunity cost** of carrying this activity than the other agent.

Principle of Comparative Advantage – Everyone is better off if each agent (or each country) **specialises** in the activities for which they have a comparative advantage. *The gains from specialisation grow larger as the difference in opportunity cost increases.*

Economy PPC in Two Agent Economy

Principle of Increasing Opportunity Cost (Low Hanging Fruit) – In the process of increasing the production of any good, first employ those resources with the lowest opportunity cost and only once these are exhausted turn to resources with higher cost.

The main factors driving **economic growth** (i.e. pushing the economy PPC out and to the right) are:

- Increase in **infrastructure** – factories and equipment
- Increase in **population** – labour force

- Advancements (increase) in **knowledge and technology** – education, research & development, IT and communications technology.

Trading Between Economies: International Trade

A country's **economic welfare** does not depend on what it produces (PPC), but on what it **consumes** – Consumption Possibility Curve (CPC).

Consumption Possibility Curve (CPC) – the CPC represents all possible combinations of two goods that the economy can feasibly consume when it is open to international trade. It depends on international prices.

In a **closed economy**, the PPC and CPC are identical, as there is no trade therefore the economy consumes what it produces.

In an **open economy**, agents can trade at a world price and consume more. Therefore the CPC will be to the right and above the PPC.

Consumption Opportunities in an open economy are always **wider** than in a closed economy.

Classic Critiques to the Model

Assumptions:

- No psychological cost
- No transaction costs (negotiation costs, transportation costs etc.)
- No import quotas or tariffs
- No change in preferences

Supply in Perfectly Competitive Markets

Market – The Market for a given good or service is the set of all the consumers and suppliers who are willing to buy and sell that good or service at a given price.

Market Equilibrium – Market Equilibrium occurs when the price and the quantity sold of a given good is stable, or when the equilibrium price is such that the quantity that consumers want today is the same as the quantity that the suppliers want to sell.

Characteristics of a Perfectly Competitive Market

- Consumers and Suppliers are Price-Takers
- Homogeneous Goods
- No externality
- Goods are Excluded and Rival
- Full Information
- Free Entry and Exit

Supply Curve for an Individual

Marginal Benefit – The Marginal Benefit of producing a certain unit of a given good is the *extra benefit* accrued by producing that unit.

Marginal Cost – The Marginal Cost of producing a certain unit of a given good is the *extra cost* of producing that unit. It is the cost of producing one extra unit.

Cost-Benefit Principle – The Cost-Benefit Principle states that an action should be taken if the marginal benefit is greater than the marginal cost.

$$\text{Marginal Benefit} \geq \text{Marginal Cost} \quad \text{TAKE THE ACTION}$$

$$\text{Marginal Benefit} < \text{Marginal Cost} \quad \text{DON'T TAKE THE ACTION}$$

Economic Surplus – The Economic Surplus of a certain action is the difference between the marginal benefit and the marginal cost of taking that action.

Quantity Supplied – The quantity supplied by a supplier represents the quantity of a given good or service that maximises the profit of the supplier.

Supply Curve – The Supply Curve represents the relationship between the price of a good or service and the quantity supplied of that good.

Law of Supply – The tendency for a producer to *offer more* of a certain good or service *when the price of that good or service increases*.

The Supply Curve can be interpreted:

- **Horizontally**: start from a certain Price and then use the supply curve to derive the Quantity of goods that will be supplied at that price.
- **Vertically** Start from a given Quantity, find the associated Price on the supply curve → the minimum amount of money the producer is willing to accept to supply the *marginal unit* of the good – **PRODUCER RESERVATION PRICE**.

Supply Curve for a Firm

Sunk Cost – A Sunk Cost is a cost that once paid cannot be recovered.

Fixed Cost – A Fixed Cost is a cost associated with a fixed factor of production – cost does not vary with quantity produced.

Variable Cost – A Variable Cost is a cost associated with a variable factor of production – if factor of production is variable, the cost tends to vary with the quantity produced.

Short Run – The Short Run is a period of time during which **at least one factor of production is fixed**.

Long Run – The Long Run is a period of time during which **all factors of production are variable**.

$$Total\ Cost = Variable\ Cost + Fixed\ Cost$$

$$AVC = \frac{VC}{Q}$$

$$ATC = \frac{TC}{Q}$$

$$Marginal\ Cost = \frac{\Delta TC}{\Delta Q}$$

$$Total\ Revenue = Price \times Quantity$$

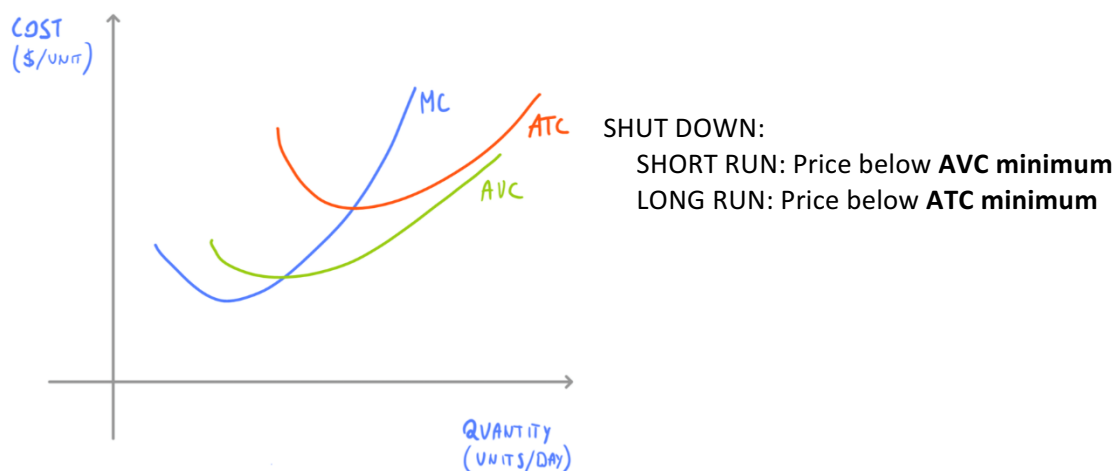
Profit – The Profit represents the **difference** between the total revenues (TR) and the total costs (TC).

$$\pi_{production} = TR - TC$$

$$\pi_{shut-down} = FC$$

Shut Down Condition (Short Run) – In the short run, the entrepreneur should shut down if $\pi_{production} < FC$. Otherwise, hire the optimal number of workers and continue operations.

Shut Down Condition (Long Run) – In the long run, the entrepreneur should shut down if $\pi_{production} < 0$. Otherwise, hire the optimal number of workers and continue operations.



Supply Curve (Short Run) = The part of the MC Curve above the AVC.

Supply Curve (Long Run) = The part of the MC Curve above the ATC.

What Shifts the Supply Curve to the right:

- Drop in the price of (variable) inputs
- Advancements in technology (via its impact on productivity)

- Expectations (on future prices/demands)
- Drop in the price/demand of other products
- Increase in number of suppliers

Price Elasticity of Supply

The price elasticity of supply represents the *percentage change in the quantity supplied resulting from a very small percentage change in price*. It also measures the **responsiveness of the supply to changes in price**.

Law of Supply – Supply curves have the tendency of being upward sloping.

$$Elasticity_A = \frac{P}{Q} \times \frac{1}{slope} = \frac{\Delta Q}{Q} \div \frac{\Delta P}{P}$$

Elastic Supply – Supply is elastic when the price elasticity of supply is **greater than 1**.

Unit Elastic Supply – Supply is unit elastic when the price elasticity of supply is **equal to 1**.

Inelastic Supply – Supply is inelastic when the price of elasticity of supply is **less than 1**.

What changes the elasticity of supply:

- Availability of raw materials
- Factors mobility
- Inventories/excess capacity
- Time horizon

Chapter 3 - Demand in a Perfectly Competitive Market

3.1

Demand Curve for an individual

Utility

Utility denotes the satisfaction that an individual derives from consuming and giving good or taking a certain action. It is measured in *utils* per unit of time.

Decreasing Marginal Utility

Decreasing marginal utility implies that the utility from consuming an extra unit of giving good decreases with the number of units that have been previously consumed.

Example: Glass of water after a long run

Marginal Utility = Marginal Benefit

Quantity Demanded

Quantity demented represents the quantity of a given good or service that maximises the utility experienced by the individual consuming it.

Substitution Effect

The substitution effect captures the change in the quantity demanded of a given good following the change in its relevant price.

Income Effect

The income effect captures the changes in the quantity demanded of a given good following the reduction in the consumer's purchasing power.

Normal (expensive wine) vs Inferior (fast food) Goods

For normal good decreasing income reduces the quantity consumed however for an inferior good a decrease in income increases the quantity consumed.

Law of Demand

To man's curves have the tendency of speeding downward sloping. When the price increases the quantity demanded decreases. On the other hand when the price decreases the quantity demented increases.

Giffen Goods

The exception to the law of demand is a different good for which an increase in price increases the quantity demanded. These goods are extremely rare.

Interpretations of the demand curve

1. Horizontal interpretation

Start from a certain price and funny associated quantity in the demand curve. The quantity you found indicates how many units the consumer is willing to buy that price.

2. Vertical interpretation

Start from a certain quantity and funny associated price on the demand curve the price you found indicates the maximum amount of money the consumer is willing to pay for the marginal unit in economics we call this maximum amount of money the reservation price or willingness to pay.

3.2	From a Discrete to a Continuous Model
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Substitutes

Increase in the price of one causes an increase in the quantity demanded of the other

Compliments

Two bits of compliments when a decrease in the price of one causes an increase in the quantity demanded of the other.

Factors that generate the shift to the right of the demand curve (a shift to the left is generated if these factors move in the opposite direction)

1. Successful marketing campaign
2. Decreasing the price of compliments
3. Increase in the price of substitutes
4. Increase in income for normal good
5. A decrease in income for an inferior good
6. A positive shift in consumers preference towards a certain good
7. Expectations of an increase in future prices that push the buyers to purchase the goods early
8. Population growth

3.3	Price Elasticity of Demand
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Price elasticity of demand

The price elasticity of demand captures the percentage change in quantity demanded resulting from a very small percentage change in price. The elasticity measures the responsiveness of the quantity demented of a given good to changes in its price (almost always negative).

Elastic Demand

Demand is elastic if the price elasticity of demand is greater than 1

Unit Elastic Demand

Demand is unit elastic if the price elasticity of demand is equal to 1

Inelastic Demand

Demand is inelastic if the price elasticity of demand is less than 1

$$Elasticity = \frac{P}{Q} \times \frac{1}{slope}$$

Note:

- The elasticity will decrease along the demand curve moving from left to right, as the price decreases and the quantity increases.
- At the mid-point for the demand curve the elasticity is exactly equal to one.