**Chapter 3.1 – Theory of Demand and Supply**

**3.1.1 Meaning of demand and supply**

The theory of demand and supply is one of the fundamental economics concepts taught at classes and utilized in different levels, such as business operations and consumer transactions. For students, one of the most applicable situations is the need to purchase daily necessities at the supermarkets or convenience stores, in which they would decide whether to buy or not based on the prices set. In this chapter, students will examine the specific components of demand and supply then comprehend the setting of the market equilibrium, which determines the price and output.

**3.1.2 Theory of Demand**

**I. Definition of demand**

Demand refers to the consumer’s desire and willingness to purchase based on consumer satisfaction and the ability of the consumers' purchasing power to purchase goods and/or services at a particular period of time and the maximum level of price.

**II. Law of demand**

The Law of demand states the inverse relationship between the price of good and the quantity demanded of the good, ceteris paribus.

**III. Demand Curve**

The Demand Curve represents the maximum price that consumers are willing and able to pay for 1 unit of the good. It is downward-sloping (inverse r/s between P & Qty dd) because of the **income effect** and the **substitution effect** that is reflected when the price of good changes.

**Diagram 1 - Downward-sloping demand curve**

**IV. Determinants of demand**

The determinants of demand can be classified into 2 factors - price and non-price determinants. Price determinant will cause a change in quantity demanded while the non-price determinants will cause a change in demand.

A. **Price determinants**

**Price:** An increase in price of the good concerned contributes to an increase in quantity demanded and vice versa.

B. **Non-price determinants**

**Change in real disposable income:** An increase in income increases the demand of a normal good, which refers to a good with a more than proportional increase in quantity demanded when income increases. However, an increase in income decreases the demand of an inferior good, which refers to a good with less than proportional increase in quantity demanded when income increases.

**Change in tastes and preferences:** A change in tastes and preferences changes the consumer's’ desired demand of the good. This can be brought about advertisements, promotions, education, culture etc.

**Population and Demographics:** A change in demographics of the population affects the potential consumers and market size of the good concerned. For example, an ageing population like Singapore’s increases the demand for elderly healthcare services.

**Government policies:** Implementation of government policies and law can compel consumers to demand more for certain goods. Taking ERP as an example, such implementation increases demand for cash cards and in-car payments units.

**Expectation of future prices:** An expected decrease in future prices would decrease current demand for good concerned as consumers would postpone consumption now and increase demand in future

* E.g. Demand for oranges and festival goods during the CNY period - leads to surge in price of festive-related commodities

**V. Difference between change in quantity demanded and change in demand**

A change in quantity demanded is illustrated by an upward or downward movement along the demand curve whereas a change in demand can be seen as a leftward or rightward shift in the demand curve.

**VI. Types of demand**

**A.** **Joint demand**

The relationship of the two goods is complementary in nature, implying that the increase in quantity demanded for good A will lead to the increase in demand for good B. An example of goods with joint demand would be soft drinks and french fries.

**B.** **Competitive demand**

The two goods are substitutes for each other, implying that the increase in quantity demanded for good A will lead to the reduction in demand for good B. For example, specially-brewed coffee and soft drinks are substitutes in nature, with competitive demand.

**C. Derived demand**

The relationship of the two goods is linked in such a way that the demand for good A is dependent on the quantity demand of good B. For example, the demand of bricks depends on the demand of houses.

**D.** **Composite demand**

The demand for the goods comes from many sources. (It can be used in many ways by different types of consumers.) For example, the demand of steel derives from multiple appliances, ranging from kitchenware to infrastructure.

**VII. Explain how a change in the income of the consumers in the aviation industry will affect the demand for air tickets and related market.**

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* + 1. **Supply**
1. **Definition of supply**

Supply refers to the amount of goods and service producers are willing to produce based on profit motives and ability to produce based on production capacity to offer up for sales at particular price over a certain period of time.

1. **Law of supply**

The law of supply shows the positive relationship between the price of good and the quantity of goods supplied by all the producers in the industry.

1. **Supply Curve**

The supply curve represents the minimum price that all producers are willing to accept and able to produce. It is upward sloping because producers always aim to maximise profits by selling more at a higher price.

**Diagram 2 - Upward-sloping supply curve**

1. **Determinants of supply**

Determinants of supply can be classified as the price determinant (factor - Δin COP) and non-price determinants. Price determinants contribute to an increase in quantity supplied (Δ in SS) while non-price determinants contribute to a change in supply.

**A. Price determinants**

**Price of the good concerned:** An initial increase in demand for the good concerned will contribute to an increase in price of the good concerned and thus, it will lead to an increase in quantity supplied.

**Prices of inputs / Cost of Production:** A rise in the price of the resources such as wages or price of raw materials will increase the cost of production, leading to a decrease in supply of the goods.

**Prices of related goods:** A change in price of related goods can affect the supply of goods concerned.For example, whale meat and whale blubber are of joint supply. Hence the increase in supply of one good results in the increase of supply of another.(by-products from production can increase the SS of the other good)

**B. Non-price determinants**

**Availability of resources:** If the availability of resources is limited, the production capacity will be lesser, thus making it difficult for the industries to increase production. It is likely the cost of production will increase and thus, the supply of goods will reduce.

**Technology:** An improvement in technology will raise productivity of the industries and help to lower cost of production and this enables the industry to increase the supply of the good.

**Taxation and subsidies:** An increase in taxation will lead to an increase in cost of production which will lead to a decrease in supply of the good. Increase in subsidies will lead to a reduction in cost of production which will lead to an increase in the supply of the good.

**Numbers of firms:** An increase in the number of firms in the industry will lead to an increase in the supply of the goods.

**Goals of the firm:** If the aim of the firm is to increase the production level so as to reap benefits of large scale production (reap EOS), the supply of the good will increase.

**Weather and endowment of resources:** Certain products’ production capacity is constrained by the weather condition distribution of the endowment of the natural resources and hence the supply of the good may increase or decrease.

* E.g. Shortage of N95 masks during the haze period - higher prices of the related good

**V. Difference between change in quantity supplied and change in supply**

A change in quantity supplied refers to the condition when there is increase in quantity of the good as a result of the change in price of the goods itself while the change in supply of the goods refer to the condition when the increase in quantity of the good is due to the change in the non-price determinants. The change in quantity supplied is represented by the upward or downward movement of the supply curve while the increase in supply of the goods is represented by the rightward and leftward shift of the supply curve.

**VI. Types of supply**

**A. Fixed supply**

The supply of the production is restricted and fixed and it will not change in accordance to the change in the price level. For example, the fishery industry has its production capacity fixed by natural environment factor.

**B.** **Joint supply**

The increase in quantity supplied of a good will lead to the increase in the supply of another good as the production of one good will create the  by-products which can be used for the production of another good. The increase in the supply of these resources will lower the cost of production for latter, thus leading to an increase in the supply of the good.

**C.** **Competitive supply**

The increase in supply of one good will lead to the reduction of another good as the production of one good (competing for same resources) requires resources for production which is also used for the production of the good. Due to the condition of limited resources, the cost of these resources will increase which will raise the cost of production and thus, contributing to the fall in supply of the good concerned.

**VII. Explain how a change in the supply of beef will affect the related market**

In the case of the beef market, goods such as ox leather share a joint supply while goods such as chicken meat share a competitive supply. When the supply of beef increases, production of beef increases production of ox leather as a by-product. The increase in supply of both beef and ox leather lowers the cost of production of the latter and hence increases the supply of ox leather.

For the case of beef and chicken meat, the increase of supply of beef will lead to the reduction of chicken as the production of beef requires the same resources for production as chicken. Due to the condition of limited resources, the cost of these resources will increase which will raise the cost of production, thus contributing to a fall in supply of chicken.

**3.1.4 Market Equilibrium**

**I. Definition of market equilibrium**

Market Equilibrium is a condition where the market demand is equal to market supply. At equilibrium, the **market clearing price** and quantity is determined.

**II. Graphical illustration of market equilibrium**

**Diagram 3 - Market equilibrium**

**III. How the shortage and surplus will affect the price and output decisions**

A shortage and surplus will lead to a change in market equilibrium that will depict the impact of the change in demand and supply on the market which will set the new equilibrium price and output level.

**IV**. **Explain the impact on the market when the increase in demand for coffee is greater than the increase in supply of coffee**

**a) Explain how the market equilibrium will change when the increase in demand for coffee is greater than the increase in supply of coffee**

**ai) Economic Causation**

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**aii) Diagram 4 - increase in demand for coffee is greater than increase in supply of coffee**

**aiii) Description of the diagram**

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**V. Explain how an increase in the price of oil will affect the market for corn and rice.**

**Part 1) Explain how an increase in the price of oil will affect the market for oil and affect the competitive demand market for oil (biofuel)**

**ai) Economic causation**

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**aii) Diagram 5 - increase in the price of oil leads to increase of price of biofuel**

**aiii) Description of diagram**

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**Part 2) Explain how change in the market condition for biofuel will affect the demand for the corn**

**ai) Economic causation**

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**aii) Diagram 6 - Increase in price of corn**

**aiii) Description of diagram**

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**Part 3) Explain how change in the market condition for corn will affect the market for rice**

**ai) Economics Causation**

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**aii) Diagram 7 - increase in the supply of corn - decrease in the supply of rice**

**aiii) Description of the diagram**

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**Part 4) Analysis - Identify the key determinant in this economic determination**

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