**Chapter 1 - Theory of Demand and Supply / Price Elasticity of Demand and Supply**

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### **Chapter 1 - Theory of Demand and Supply**

**1. Demand: Main Definitions and Concepts**

**1.1 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.

**1.2 State the factors that affect the demand**

Determinants of Demand can be classified as price and non-price determinant. Price determinant will cause a change in quantity demanded while the non-price determinants will cause a change in demand.

1. **Price of the good concerned**

An increase in the supply of the good concerned will lead to a fall in the price of the good concerned and thus, contributes to an increase in quantity demanded and vice-versa.

Demand may shift when there is a change in the price of related goods

* Substitute is a commodity that can be used in the place of another. The decrease in price of the substituting good leads to a decrease in demand of good concerned. (nature of usage)
* Complement is a good that can be used in conjunction with another. An increase in price of a complementary good results in a decrease in quantity of the good concerned. (nature of usage)
1. **Change in the consumer’s real disposable income**
* Increase in income will increase the demand of a **normal** good (large proportion of income spent on it
* Increase in income will decrease the demand of an **inferior** good (small proportion income of spent on the good)
* **depends on the income of the average earners**
1. **Change in tastes and preferences**
* A change in tastes and preferences changes the consumers’ desired demand of the good.
* Changes in preference can be brought about by advertisements, promotions, education, culture, etc.
1. **Population and demographics**
* Change in demographics of the population affects the potential consumers and market size of the good concerned.
* For example, an ageing population increases the demand of elderly healthcare services.
1. **Government policies**
* Implementation of government policies and law can compel consumers to demand more for certain goods.
* For example, implementation of ERP leads to an increase in demand for cash cards and in-car payments units.
1. **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

**2.Supply: Main Definitions and Concepts**

**2.1 Supply**

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

**2.2 State the factors that affect the supply**

Determinants of supply can be classified as the price determinant (factor - r in COP) and non-price determinants. For price determinant, it will contribute to an increase in quantity supplied (r in SS) while for non-price determinants they will contribute to a change in supply.

1. **Price of the good concerned**

An 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.

1. **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.
1. **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.
1. **Prices of related goods**
* Change in the 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) (beef and leather)
* Beef and milk are of competitive supply. The more cows are slaughtered for beef the less there is to produce milk.(need for similar resource) corn and rice – demand for land
1. **Technology**
* An improvement in technology will raise productivity of the industries and help to lower the cost of production and this enables the industry to increase the supply of goods.
1. **Taxation and subsidies**
* 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.
1. **Numbers of firms**
* An increase in the number of firms in the industry will lead to an increase in the supply of the goods.
1. **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.
1. **Weather and endowment of resource**
* 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.

**3. Types of Demand**

* **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. (demand for bread – demand for butter)
* **Competitive demand** (substitutes in nature): 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. – serving the same need as beverages
* **Derived demand** (dependency in nature): 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, brick and houses. – petrol and cars
* **Increase in demand for cars will lead to increase in demand for goods which are derived demand like petrol.**
* **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, steel – can be used for ship building, cars, TV.

**4. Types of Supply**

* **Fixed supply curve**: 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.
* **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 down the cost of production for latter, thus leading to an increase in the supply of the good.
* **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.

**5. Explain how the market equilibrium of the rice market is attained**

5.1. Concept of market equilibrium

* This condition of market equilibrium is attained when the market demand is equal to market supply. At equilibrium, the **market clearing price** and quantity is determined.
* In this situation, buyers and sellers have no incentive to deviate from their current economic actions
* Any change in demand and supply condition 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 depict the new equilibrium price and output level
* Impact on market for air travel due to rise in oil price and global recession

5.2 Diagram

Price of Rice

Quantity of Rice

S0

D0

P0

Q0

5.3 Description of diagram

When the market is in equilibrium, the demand and supply curves for rice will intersect at the point marked E0 where equilibrium price is P0 and equilibrium quantity is Q0.

Consumer surplus is the difference between the maximum amount that consumers are willing to pay for a given quantity of good and what they actually pay (equilibrium price).

Producer surplus is the difference between the amount received by producers and the minimum amount that they are willing and able to accept for supplying the good

**6. Explain how the price of property will rise despite an increase in the supply of property**

In this question, there is a need to understand that the answer is built through several steps:

6.1 Introduction
State that the economic development stated in the property market above can be explained through the demand and supply analysis which shows how price of property increases despite an increase in the supply of the property. This is explained when the market equilibrium for the property market is attained where the price and output is seen after considering how the above changes are reflected in the demand and supply analysis.

6.2 Main body

6.2.1 Explain how the price and output level of the property market is set when the market equilibrium is attained

6.2.2 Explain the economic causation

* Explain how the increase in supply of property occurs and lower the price of the property
* Explain how the price of the property when there is an increase in the demand for property which is greater than the increase in supply of property

6.3 Diagram - Increase in demand is greater than the increase in supply

D0

D1

S0

S1

P of property

Qty of property

P1

P0

Q0

Q1

6.4 Description of the diagram

As seen from the diagram, the increase in demand for property from Do to D1 is greater than the increase in supply from So to S1 which causes an excess demand in the property market at the original price level at Po. Consequently, there is an upward pressure which causes the price to rise from Po to P1 while the output increases from Qo to Q1, explaining how the property market price of property will rise despite an increase in the supply of property.

6.5 Analysis

The impact in terms of the extent of the change in price depends on the value of the price elasticity of the supply as the price inelastic condition of demand for the property market will see the price rise higher.

6.6 Conclusion

Thus, it can be observed that the change in price can be explained by the demand and supply analysis where the changes in demand and supply analysis helps to explain how price will change. It is also imperative to consider the influence of the price elasticity of demand and supply would affect the extent of change in the price and output..

**7. Explain how the price of tickets and sale of tickets are determined in a football match**

7.1 Introduction

State the price and sale of tickets for the football match can be explained through the demand and supply analysis and this is explained when the market equilibrium for the football match is attained where the price and output is seen after considering the nature of demand and supply of the football market.

7.2 Main body

7.2.1 Explain how the price and output level of the football market iis set when the market equilibrium is attained

* Explain the economic causation in this analysis
* Explain why the market supply is fixed - there is a fixed stadium capacity which determines the fixed supply curve - the supply cannot be increased even if there is an increase in price
* Explain how the demand is perfectly elastic as there is perfect market information, shaping the demand curve to be perfectly elastic as there is only one prie level. This means that the organiser of the football match will not sell below the price and the consumers will not buy above the price level.
* Consequently, the price and output level is set at the market equilibrium where the demand curve intersects the supply curve.

7.3 Diagram - Vertical supply and perfectly elastic demand

S0

D1

P0

Q0

P of ticket

Q of ticket

7.4 Description of the diagram

As seen from the diagram, the supply is vertically sloped as in So at qo while the demand curve is perfectly elastic at Do at Po and the market equilibrium is attained at Eo where the demand and supply curve intersects. The price is set at Po and output is at Qo.

7.5 Analysis

It can be observed that there is a fixed amount of quantity and price is set only at a price which explains why the demand and supply curve is horizontally and vertically sloped.

**8. Explain how the market of rice affects the market of corn**

8.1 Explain how demand for substitutes affect related markets.

As good X (coffee) and good Z (tea) are substitutes as they have the same nature of use and this implies that the consumers can consume more coffee and less tea when there is a change in taste and preference. This means that there will be an increase in demand for coffee while there is a fall in demand for tea in their respective markets.

Price of good X

Quantity of good X

Sx

D0

P0

Q0

D1

Q1

P1

Price of good Z

Quantity of good Z

SZ

D0

P0

Q0

D1

Q1

P1

When demand for good X increases from D0 to D1, demand for good Z decreases from D0 to D1 since they are substitutes. As a result, the quantity and price of good Z (tea) will decrease from Q0 to Q1 as the price of tea falls from Po to P1.

8.2 Explain how supply of substitutes affect related markets.

For goods like corn and rice, they are classified as competitive supply, given that the increase in quantity supplied of the rice increases due to an increase in demand for corn can cause a fall in the supply of rice as there will be less resources like land to increase the production of rice. This means that the cost of production of rice increases as there are lesser resources for the production which increases the cost of resources of rental of land for farming of rice. Consequently the supply of rice reduces, causing an increase in the price of rice and reduction in quantity of rice.

P of corn

Qty of corn

P0

P1

Q0

Q1

D0

D1

S0

P of rice

Qty of rice

D0

S1

S0

P1

P0

Q1

Q0

As seen from the diagram, there is an increase in demand for corn in the market for corn from Do to D1 and this causes the price of corn from p0 to P1 which induces an increase in the quantity supplied of corn Q0 to Q1. As a result, there is a reduction in supply of rice from S0 to S1 and this causes the price of rice to rise from Qo to Q1 as there are fewer resources for production of rice.

**9. Explain how the process of globalization and advancement in video conferencing technology affects the air aviation market**

9.1 Economic Causation

As the world globalised, there is a higher degree of global interaction and socialization and greater business activities that demands people to travel more, which creates a new preference for traveling and this contributes to an increase in market demand for air travel. It is reported that air travel was at an all time high of $872 bn in 2019. On the other hand, the development of video conferencing technology like zoom and hangouts reduces this need for traveling and the new way of life that has dependency on air travel. Consequently, the demand for air travel falls.

However, we can observe that the reduction in demand for air travel due to video-conferencing technology is lesser than the increase in demand for air travel due to globalization and this still contributes to an overall increase in demand for air travel.

9.2 Diagram

9.3 Description of diagram

S1

D0

D1

D2

P1

P2

P0

Q0

Q1

Q2

Qty of Air Ticket

Price of Air Ticket

As seen from the diagram, the increase in demand for air travel from Do to D1 is greater than the fall in demand from D1 to D2 and this will still create an excess demand condition for air travel at original price level at Po. Consequently, the price and output for the travel market increases from Po to P2 and Qo to Q2

9.4 Analysis

The above development in the air travel market depends on the extent of change in demand and the influence of the factors affecting the change in demand. The extent of change in price can also be affected by the value of the price elasticity of demand and supply

**10. Is demand or supply factor more significant in influencing the oil market?**

In the oil market, both the demand and supply factors can affect the changes in the oil market in terms of the change in price and output but the debate lies around whether the demand or supply factors would be significant in influencing the changes in demand and supply factors. As observed, there are several factors that would determine the results under different considerations.

**1. Context of the CSQ or the preamble in the question**
As stated in the extract, the innovation of fracking technology has enabled oil producing firms in US to increase production three times more than before and the legislation by US government to export oil further increases the supply of oil in the global market. This increase in supply in the short run will be a good reason to explain the supply factor is more important than the demand factor as these changes in the supply can increase supply extensively in the short run. As for the fact that the world economy is in recession and may not demand so much oil, the demand factor is therefore seen to be less significant. Nonetheless, as oil is still an essential resource and production will be reduced extensively, the influence of oil is still significant as the reduction by the users is not that great.

2. Nature of product

It is also imperative to consider that oil is a derived demand and the product is non-perishable and can be stored. The usage of oil is dependent on the world production as oil is an essential resource for production and its influence on the oil market will depend on the demand for goods and services. Besides, our high reliance on the usage of oil will make the demand for oil more significant in the short run but as technology advances, allowing other sources of renewable for technology to replace the usage of oil, the demand for oil will fall. Furthermore, the supply of oil can be stored and is not perishable and this will enable the economy to supply oil, lessening the influence of supply in affecting the oil market. Nonetheless, the recent COVID-19 impact shows how the high cost of storage of oil will contribute the drastic fall of price of oil and the future of price of oil falls become negative. Hence, the nature of product and how it behaves under certain economic conditions also determine the significance of the influence.

3. Price elasticity of demand

The price elasticity of demand and supply is also another consideration on the significance of the influence of the demand and supply in affecting the oil market. If the goods are price inelastic in short run and the factors like high degree of necessity of demand for oil as a resource for production and the substitutability of oil by other resources makes demand for significant in influencing the of oil market. Supply becomes a more significant influence in the long run when capacity of production is limited by the finite supply of oil as we have a limited supply of this resource on earth.

4. Time period

In the short run, the demand for oil is more significant in influencing the market for oil as oil is used when there is a greater production level of goods and services due to the growth in of the global economy. This is a major consideration as the supply factor is less influencing on the market as the supply can be stabilized with storage to ensure less fluctuation of the price of oil in the short run. Furthermore, it is easy for oil producing countries like OPEC to increase supply in the short run.

In sum, the significance of the influence of demand and supply in influencing the oil market depends on the given factors identified above. However, the singling out which factor is the pivotal factor depends on the circumvent of the economic development.