**Notes 2018 – Demand and Supply & Elasticity of Demand and Supply**

**Part 1: Theory of Demand and Supply**

**Main Definitions and Concepts**

* 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.

1.1.1 Assumptions (Rational consumer behaviour – maximization of their satisfaction)

* Consumers spend all income on goods and services/ maximisation of consumer welfare
* Consumers always prefer more of a normal good as compared to less.
* Producers always aim to maximise profits by supplying more of a good at a given price level.
  1. Demand Curve
* The demand curve shows the inverse relationship between the price of good and the quantity demanded of the good, ceteris paribus.
* It represents the **maximum** price that consumers are willing and able to pay for 1 unit of the good

🞹The demand curve is downward-sloping (inverse r/s between P & qtydd) because of the **income effect** and the **substitution effect** that is reflected when the price of good changes.

* Income effect reflects a change in **real** income when there is a change in the price of good, ceteris paribus. For example, when the price of good increases, the consumer can buy more units of the good with the same amount of money. (increase purchasing power)
* Substitution effect reflects the consumers’ switching to, or from, alternative good due to a change in price of one good. For example, a rise in price of good A cause a fall in quantity demanded of good A because consumers switch to a cheaper alternative.
  1. Change in Quantity Demanded

A change in quantity demanded is the change in consumption of the goods due to a change in the price of the good concerned. This is represented by a movement **along** the demand curve.

* 1. Change in Demand

A change in demand is a change in the consumption of the goods due to factors other than the change in price of the good concerned. This represented by the **shift** of the demand curve.

## 1.6 Determinants of 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.
    - **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
* it 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)
* **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**
  + - **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.
  + - **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.
  + - **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.
  + - **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

↓P,↑relative Y

🡪Normal good🡪↑Qty dd

🡪Inferior good 🡪 ↓Qty dd

Substitution effect🡪↓Px🡪↑Qty dd­x

↓dd for Y

i) Normal good 🡪↓Px🡪Y effect (↑Qty dd) + Sub effect (↑Qty dd)

⇨ Y effect + Sub effect 🡪 more than proportional ↑ Qty dd – Price-elastic dd (E.g. Students to KFC)

ii) Inferior good 🡪↓Px🡪Y effect (↓Qty dd) + Sub effect (↑Qty dd)

⇨Sub effect > Y effect 🡪 less than proportional ↑ Qty dd – Price-inelastic dd

(E.g. Adults to KFC)

1.7 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.

**Qn: Explain the price-elasticity of demand for steel**

### ✓ Price-inelastic for the portion of demand when P↑ (High degree of necessity of dd – essential resource)

✓Price-elastic for the portion of demand when P↓ (many sources of use)

P of steel

DD

Qty of steel

Q2

Q0

Q1

P0

P2

P1

### 2.1 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.

### 2.2 Supply Curve

* + - 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.
    - It represents **minimum** price that all producers are willing to accept and able to produce.

🞹Supply curve is upward sloping because producers always aim to maximise profits by selling more at a higher price.

### 2.3 Change in Quantity Supplied

A change in quantity supply means that the change in production capacity is due to the change in the price of the good concerned. This is represented by a movement **along** the supply curve

2.4 Change in Supply

* + - A change in supply means that the change in production capacity is due to some other factors beside the price of the goods concerned. It is represented by the **shift** of the supply curve (See 3).

## 2.5 Determinants of Supply

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

* + - **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.

**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.
  + - **Prices of related goods**
* Change 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
  + - **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**
* 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.

### 3.1 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
* price and o/p
* consumer and producer surplus

### 3.2 Consumer and Producer Surplus

* + - 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.

**Qn for Discussion**

**1. Explain how price of property rises despite an increase in the supply of property. (6)**

**2. Explain how an increase in demand for oil leads to a fall in the supply of oil. (6)**

2.6 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.

Fixed Supply Curve

i. Stadium capacity

ii. COE 🡪 new cars

Qty

* **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.

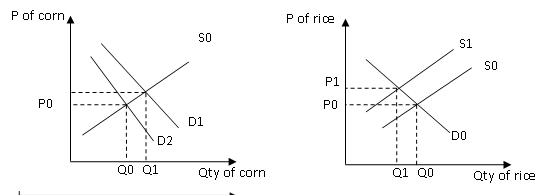
For illustration

Competitive supply 🡪 increase in qty supply of one good will lead to reduction in the supply of another

🡪Competing for same resources

**Explain how the increase in demand for cornaffects the market for rice.**

e.g. Increase in DD for corn 🡪 Increase P of corn 🡪 ↑ Qty ss of corn🡪 decrease ss of rice – competing for one of land



Increase DD for corn🡪 Increase P of corn

🡪Increase Qty SS of corn

🡪Increase DD for land to produce corn

Increase COP of Rice (Shortage of land)

🡪Decrease SS of rice 🡪 Increase P of rice

🡪Decrease Qty dd for rice

Description of the graph:

**Question for discussion**

Why increase in price of oil will lead to increase in price of rice?

Direct Answer: (2 marks)

increase in price of oil – increase in cost of transport – increase in cost of production for rice – decrease in supply of rice – increase in price of rice (1-2)

* Increase in price of oil🡪decrease qty dd of oil🡪 increase dd for bio fuel🡪 increase dd for corn (competitive dd (oil/bio-fuel) (competitive ss) (corn/rice)

🞹**Qn: Why↑ P of oil will lead to ↑ P of rice? (types of demand and supply)**

Step 1 - ↑P of oil 🡪↓Qty dd for oil🡪↑dd for biofuel (Competitive demand)

Step 2 🡪increase in biofuel leads to increase in dd for corn🡪 (Derived demand)

Step 3↑ price of corn🡪↑ qty ss of corn 🡪 ↑dd for land 🡪↑ COP for rice 🡪↓ ss of rice 🡪 ↑P of rice (competitive suuply)

Oil and biofuel –

Corn and biofuel –

Corn and rice -

No of diagrams to be drawn

1. oil market
2. biofuel market
3. corn and rice market

### PES for cash crop – price inelastic – long gestation for production

### PED for cash crop – price inelastic – high degree of necessity of demand – staple food

**Part 2: Elasticity of Demand and Supply**

## **Meaning of concepts**

### **Elasticity of Demand**

* + - Elasticity of demand measures the responsiveness of change in quantity demanded as a result of change in the variables influencing it.
    - The changes in the variables are the change in the price of the goods itself, price of other goods and income of the consumers.

### **Price Elasticity of Demand (PED)**

* + - Price elasticity of demand measures the responsiveness of change in quantity demanded as a result of change in its price.
    - It is **NOT** equivalent to the slope of the demand curve.
    - Formula (state the value of PED) – value of Zero to infinity



### **Cross Elasticity of Demand (CED)**

* + - Cross elasticity of demand measures the responsiveness of change in quantity demanded as a result of change of price of other good.
    - Formula



### **Income Elasticity of Demand (YED)**

* + - Income elasticity of demand measures the responsiveness of change in quantity demanded due to a change in the income of the consumer.
    - Formula



### **Price Elasticity of Supply (PES)**

* + - Price elasticity of supply measures the responsiveness of the change in quantity supplied due to a change in the price of the good concerned. (value of zero to infinity)
    - Formula



## **Concepts of Price elasticity of Demand - Explanation or Distinguish**

1. Definition
2. Formula
3. Magnitude/Co-efficient (value / +/-)
4. Determinants
5. Uses/Implications
6. Assumptions

### PED = 0

* + - Perfectly price inelastic – when demand curve is vertical.
    - There is no change in the quantity demanded in response to the change in the price of good concerned.

### PED < 1

* + - Price inelastic - Steep demand curve.
    - The proportional change in quantity demand is less than the proportional change in the price of the good concerned.

### PED = 1

* + - Unitary price elasticity - Demand curve is a rectangular hyperbola
    - The proportional change in quantity demand is equal to the proportional change in price of the good concerned.

### PED > 1 and PED < ∞

* + - Price elastic - Gentle demand curve.
    - The proportional change in quantity demanded is greater than the proportional change in the price of the good concerned

### PED = ∞

* + - Price perfectly elastic – Horizontal demand curve.
    - The proportional change in quantity demanded is infinite when there is a change in the price of the good concerned.

### When PED is negative, the good is either normal or inferior.

### When PED is positive, the good is a giffen good.

## **Determinants of Price Elasticity of Demand**

### **Degree of Necessity**

* + - When the degree of necessity of demand for a good is high, consumers will have a less than proportionate decrease in quantity demanded when there is an increase in the price level of the good concerned as the good and does not mind the higher price level.
    - The degree of necessity is influenced by the habitual and staple nature of consumption (e.g. rice – staple food; Oil-essential resources 🡪High degree of necessity of demand)

### **Availability of Substitutes**

* + - Price and cross elasticity of demand will be price-inelastic if there are less close substitutes available.
    - This depends on the classification of the goods based on and how broadly the good is categorized in relative to other goods. The broader the market is classified, the more choices are available to the consumer and the more price elastic the demand will be when there is a change in price level.
    - The degree of availability of substitutes is also influenced by the degree of market competition; which is indirectly affected by the market demand and the number of firms in the industry. When the market competition is high as the market demand is low, the consumers will have more choices, making the demand more price-elastic.

### **Proportion of Income Spent on the Good**

* + - If the good takes up only a small proportion of the consumer’s income, the price elasticity of demand is price-inelastic as the consumer is not that price sensitive since their purchasing power is not compromised extensively. (Air passengers 🡪Ped elastic🡪Large🡪Average income earners)

### **Time Period for Consideration of Purchase**

* + - The longer the time period available for the consumer to consider their purchase, the demand will be more price-elastic as the consumers have time to look for alternatives and to consider other substitutes.

### **The Number of Possible Substitutes’ Uses**

* + - When a good can be used in many ways, the quantity demand for it will be elastic as the price reduction will be demanded by many users.
    - Even if the one group of consumers do not increase their quantity demanded as price decreases, other groups of consumers will increase their quantity demanded contributing to large change in quantity demanded of the good, influencing the demand to be elastic.

**Qn: What will happen to the TR if PED is unitary and perfect when there is an increase in income?**

## **Explain why the price elasticity of demand for 7-11 goods is price-inelastic.**

PED for 7-11 good are price inelastic for the following reasons:

Most 7-11 goods are necessities like toothpaste, food, etc and they have a high degree of necessity which is influenced by the need for use and it is also habitual in nature of consumption like cigarettes.

Since 7-11 is opened for 24 hours, there is no close substitute for a convenience store where the consumer can make purchase in 7-11 round the clock. 7-11 stores can also conduct product differentiation by distinctive renovation of the shop and strategic location of stores that make it very convenient for the consumers that it is a logical choice for them to purchase at 7-11 stores. Hence the lack of close substitute makes PED for 7-11 goods price inelastic.

Good sold in 7-11 are usually goods that are for daily use and they do not take up a large portion of the consumers’ income. Consumers are not price sensitive and the value PED is small.

The time available for a consumer to consider buying a 7-11 good is short. For example, late night hunger pangs induce consumers to look for ‘fast food’ from 7-11. As the time for consideration is short, price elasticity is low for the goods.

1. Degree of necessity of demand – High/Low
2. Availability of substitutes – More/Less
3. time period for consideration of purchase – Short/Long
4. Proportion of income spend on the good – Small/Large

## **Uses of Price Elasticity of Demand**

### **To Help to Derive the Price Strategy – To Increase Total Revenue**

* + - When the demand is **price-elastic**, a decrease in the price of the good will lead to an increase in the total revenue as the gain in revenue due to the increase in quantity demanded is greater than the loss in revenue due to a reduction in the price of the good concerned.
    - When the demand is **price-inelastic**, an increase in price of the goods will lead to an increase in the total revenue as the gain in revenue due to an increase in price of the good concerned is greater than the loss in revenue due to a reduction in the quantity demanded.

Diagram 2

Loss in Revenue due to ↓P (P0 to P1) < Gain in Revenue due to ↑ Qty Demanded (Q0 to Q­1)

Diagram 1

Gain in Revenue due to ↑P (P0 to P1) > Loss in Revenue due to ↓ Qty Demanded (Q0 to Q­1)

P

P

Qty x

Qty x

P1

P0

P0

P1

Q1

Q1

Q0

Q0

D

D

### **The Need to Conduct Price Discrimination**

* + - Refers to the setting of 2 different price levels for the same product

*✓E.g. Cathay movie discounts for students; MacDonald’s student meal*

* + - In order to conduct price discrimination, firms must be able identify the more price-inelastic demand so as to increase the revenue by selling at higher price level for the market with the price-inelastic demand and selling at a lower price level for the market with the price-elastic demand.

*✓Ped-elastic 🡪↓P (Economy Class for air travel)*

*✓Ped-inelastic🡪↑P (1st Class for air travel)*

### **Provide Information on the Tax Policy is to be Conducted – Help Government to Set Tax Revenue**

* + - The government will impose indirect tax on goods with price-inelastic demand as the reduction in quantity demand is low even if price is increases. As a result, the tax revenue will be higher, since the number of taxable units remains high.
    - The degree of the price elasticity of demand and price elasticity of supply will determine whether the tax burden falls on the consumer or the producer, thus increasing the cost of living or cost of production. [CTB🡪↑COL, PTB🡪↑COP]
    - The consumer tax burden will be higher when the demand is price-inelastic or when the supply is price-elastic

### **Provide Information of Price Regulation should be Conducted**

* + - The degree of the price elasticity of demand and supply will determine the manner on how the government will conduct the subsidy when it conducts floor price or imposes maximum price level.
    - When the demand and supply are price-inelastic, the government will impose floor price and create a stock-pile so as to maintain the revenue for the primary producers , while maintaining stock-pile is a low cost government expenditure

### **Provide Information on the Effect of Tariff and Impact of Change in Exchange Rate on the Economy**

* + - The value of price elasticity of demand for imports and exports will affect how the level of tax revenue collected from the imposition of tariff and the effectiveness of the trade policies in controlling import expenditure (Pedm is price-inelastic🡪↑tax rate)
    - It will also affect the impact of change in exchange rate on the balance of trade. For example a depreciation will not contribute an improvement in balance of trade if the Marshall-Lerner condition is not satisfied (Pedx and Pedm is less than one 🡪Depreciation 🡪BOT worsen in SR – the J curve effect🡪SR

### **Effectiveness of Labour Unions**

* + - If a labour-intensive product is price inelastic, the labour unions are more likely to succeed in asking for a wage increase.
    - Increase in wage 🡺 increase in COP 🡺 increase in price of product 🡺 revenue will not drop as much since product is price inelastic.

## **Determinants of Cross Elasticity of Demand**

### **Relationship of the Goods**

* + - The nature of usage of the goods and relation to each other will affect the relationship of the goods.
    - If goods are complementary (e.g. Ipod and Beats™ headsets), XED is negative.
    - If goods are substitutes (e.g. Asics and Nike shoes), XED is positive.

### **Market Classification**

* + - Market classification affects the nature of usage of the goods n relation to each other will affect the relationship of the goods.
    - The broader the market classification, the more elastic, the value the cross elasticity of demand.

## **Uses of Cross Elasticity of Demand**

### **To Determine the Relationship of Goods**

* + - To assess whether the goods are complementary or substitute in nature and in using this information to devise a suitable marketing strategy.
    - Firms can adjust their outputs when faced with a change in rival’s pricing. Same applies for pricing in tandem with complementary product
    - Complementary 🡪 Bundle sales (e.g. Bread and Kaya OR shoes and socks)

### **To Help to Determine the Degree of Competition and Develop Nature of Competition**

* + - By measuring the degree of competition in the industry and assess whether to conduct price strategy or not (the other choice would be to conduct product differentiation through advertising).
    - In short run, the firm will conduct extensive price reduction to raise competitiveness in the market but may conduct product differentiation and promotion in the long run to cultivate brand loyalty. This will make the product more price inelastic, allowing the firm to raise price and avoid price competition which is not feasible in long run due to market saturation and profit reduction.
    - *Substitutes: SR – always engage in price competition for substitutes*
    - *LR - ↑COP 🡪 More competition 🡪 Cannot ↓P ∴Need to conduct product differentiation🡪Ped-inelastic🡪↑P🡪↑TR*

## **8. Determinants of Income Elasticity of Demand**

*(Value is distorted by social background)*

### **The Proportion of Income Spent on the Good**

* + - If the proportion of income spent on the good is small, the value of income elasticity of demand will be negative as it is an inferior good implying that the consumer is price insensitive. (Yed is price-inelastic🡪↑P)
    - If the proportion of income spent on the good is large, the value of Yed will be positive as it is a normal or luxury, good implying that the consumer is price sensitive (Yed-elastic🡪↓P)

### **The Price of the Good and the Level of Consumer Income**

* + - The proportion of income spent on the good depends on the price level of the good and the level of the consumer income – average income earners.

## **9. Uses of Income Elasticity of Demand**

### **Provide information on how the firm can respond in relation to the change in economic growth of the country.**

🞹 This will help the firm to understand the types of goods the consumer will want to buy under the current economic condition so that it will improve the efficiency of stock management.

* Recession - ↓Yd🡪↓dd for normal good/↑dd for inferior good
  + - E.g. In good times, firms should increase production of normal goods with positive YED as consumers are willing to spend on goods which occupies large proportion of income.

### **Provide information about the consumer’s degree of price sensitivity and thus help to determine the price strategy.**

* + - As income changes with economic climate, firms can use the information from YED to derive the appropriate price strategy to maximise profits. For example, the firm can introduce instalment payment plan *(e.g. Holiday packages/electrical products)* to reduce the portion of income spent on the good so as to reduce its price sensitivity.

**Qn: Why firms cannot ↓P in LR?**

-COP ↑ as more units are produced

-↑Qtydd – may reach saturation of market

## **10. Price Elasticity of Supply**

### **10.1 Determinants of Price Elasticity of Supply**

* Price elasticity of Supply measures the responsiveness of change in quantity supplied in response to the change in price of the good itself
* Formula= Change in quantity supplied

Change in the price of good itself

### **10.1.1 Capacity of Production/ Stock of Products**

* + - The more limited the capacity of production *(e.g. agricultural product – yield from fixed land capacity),* the more price-inelastic the supply as limited production capacity means that the production capacity cannot be increased easily to accommodate the increase supply despite an increase in the price level.
    - If products are non-perishables with low storage cost, supply tend to be more price elastic.

### **10.1.2 Time Period for Production Capacity**

* The longer the time period for production, the more price-inelastic the supply as the industry has a limited capacity of production and cannot easily increase production extensively despite an increase in the price level.
* E.g. Agricultural products – Long gestation period 🡪cannot ↑SS extensively in SR🡪 PES inelastic

### **10.1.3 Cost of Resources**

* + - If the unit cost of resources is high, the cost of production is high and the industry may find it hard to increase the production capacity. Consequently a larger percentage increase in price of the good is needed to increase a certain percentage increase in the quantity supplied, contributing to a price-inelastic supply.

### **10.1.4 Number of Firms in Industry**

* + - The greater number of firms, the more price elastic as the production capacity can be easily increased where there is an increase in the price of good concerned.

**10.2 Uses of Price Elasticity of Supply**

* It depicts the extent of change in quantity demanded and change in price of the good itself when there is a change in demand for the good. When there is an increase in demand for the good, the rise in price will be sharp and the reduction in quantity will be less than proportional than the rise in price if the supply is price-inelastic
* This will explain why the supply of agricultural production is price-inelastic as the production capacity is limited by limited resource capacity as there is limited yield from limited land space

S1

P

P2

S2

P1

D2

P0

D1

Qty

Q1

Q2

Q0

↑in dd 🡪↑P🡪△Qty depends on PES

S1 – Price-inelastic 🡪 ↑P extensively

S­1 – Price-elastic 🡪 ↑P less extensively

Total revenue will increase more for price elastic supply than price inelastic supply when there is an increase in price brought about by increase in demand.

**🞹10.3 Limitations of Price-Elasticity of Demand and Supply**

* Used to explain why concepts of elasticity are irrelevant
* Magnitude of the value of PED and PES will vary as time span is longer
* Ceteris paribus condition is not possible in reality, and thus, the complexity of the economic environment will affect the value PED and PES simultaneously
* Social variables will distort the implication of the value of PED as the consumer with similar proportion of income spent on a good will have different response to change in quantity demanded because of their family background
* Concepts of elasticity cannot account for social variables which will distort the value (e.g. marriage status will distort price sensitivity), as concept of elasticity of dd/ss is a general concept

## **Uses of Price Elasticity of Supply**

### Taxation

* + - Applies to situations when PES = 0, taxation falls entirely on producers, reducing after tax income.
    - PES = ∞, where tax burden falls entirely on consumer, reducing welfare.

### **How It will Affect the Market Equilibrium**

* + - It explains why the price level will rise and fall sharply when there is a change in the demand and supply.

(When both the demand and supply are price-inelastic, the price level will rise or fall greatly when there is either a change in demand or supply as the change in quantity demanded and supplied is unable to induce a more than proportional change in the quantity demanded and supplied due to the factors that limit the response, especially in the short run.)

* + - It will also help to explain why the change in the quantity is greater if the demand and supply is price elastic as the consumers are able to respond to the change in the price level, as the consumers and producers can adjust their more responsive, with given conditions that influence them to do so.
    - It helps to determine the consumer and producer tax burden which will determine the cost of production and cost of living.

(If the demand is price elastic and the supply is price inelastic, the imposition of specific indirect tax will raise the tax burden for the producers and lower tax burden for the consumers and this will raise cost of production but lower cost of living for the consumers.

* + - It will determine the level of consumer surplus, producer surplus and dead-weight loss.
    - △ in DD/SS 🡪△ in price/qty
* value of PED/PES affect the extent of △ in price/qty
* Tax imposition 🡪 affect CTB/PTB, tax incidence and DWL

### **🞹 How It Helps the Government**

12.3.1 Impact on tax imposition of specific tax

* + - It helps the government determine the effects of taxation on certain goods.
    - If goods have high PED and low PES, the tax incidence falls more on producers
    - If good to be taxed is low in PED and high in PES, the tax incidence is skewed towards the consumers and this will affect the consumer tax burden.
    - Understanding the effects that allow the government foresee economic effects on the country as tax are imposed.

12.3.2 Use of concept of elasticity of PED to correct negative externalities

* If the demand is price-inelastic, the imposition of the indirect tax may not be able to gain the intended aim to reduce consumption and thus, the government may need to adopt other more direct form of intervention.
* ↓Qtydd by 10 units , PED is price-inelastic🡪↑tax🡪↓Qty­dd by 5 units 🡪Quotas will be preferred

12.3.3 Use of concept of elasticity of PED to explain how trade and exchange rate management of policy will affect the balance of trade

* If the price elasticity of export demand and supply are both inelastic in the short run, the import expenditure will rise and export revenue will fall when there is rise in price of import and fall in price of export due to depreciation. Other the other hand, if the price elasticity of export demand and supply are both elastic in the long run, the import expenditure will fall and export revenue will rise when there is rise in price of import and fall in price of export due to depreciation.

12.3.4 Use of the concepts of PED and PES to determine the method of government expenditure to stabilize the market after the imposition of floor price so as to reduce government expenditure

* When the demand and supply are price-inelastic and the good is non-perishable, it will be advisable for the government to buy over the excess stock to create a buffet stock to enable the government to use it as way to influence the supply of the industry. This method will also cost less in term of government expenditure as compared to subsidy at market-clearing price.
* When the demand and supply are price-elastic and the good is perishable, it will be advisable for the government to clear up the excess stock by subsidizing the consumer at the market clearing-price by paying the difference between the floor price and the market-clearing price level. This method will also cost less in term of government expenditure as compared to a buffer stock and allow the producers to sell all the quantity.

Correction of inequality of distribution of income and wealth 🡪CTB

1. **Areas of Discussion**

13.1 Analysis of the influence of concept of elasticity of demand and supply on the impact of the market equilibrium as a result of change in demand and supply

**Type I**

13.2 Explain the concepts of PED, XED, YED, and PES

* Definitions
* Co-efficient
* Magnitude
* Determinants of concept
* Uses of the concepts

Limitations of Price-elasticity of Demand and Supply

* Magnitude of the value of PED and PES will vary as time span is longer
* Ceteris paribus condition is not possible in reality, and thus, the complexity of the economic environment will affect the value of PED and PES simultaneously
* Social variables will distort the complications of the value of Ped as the consumer with similar proportion of income spent on a good will have different response to change in quantity demanded because of their family background

**Type II**

13.3 Distinguish the concepts of PED, XED, YED and PES

* Comparisons should be based on variables influencing the concepts
* Definitions
* The interpretation of the co-efficient
* How the magnitude will vary for different concepts
* Identify the different determinants
* how he uses will differ

13.4 Explain how the produces uses the concept to raise total revenue

1. **PED**
2. conduct price strategy 🡪 aim to ↑ total revenue

🡪Ped elastic🡪↓P🡪↑TR

🡪Ped inelastic 🡪 ↑P🡪↑TR

1. Conduct price discrimination 🡪 setting 2 different prices for the same product
2. **XED** – Understanding of the goods
3. Complement 🡪 Bundle sales
4. Substitutes

🡪 SR 🡪 Price reduction

🡪LR 🡪 Product differentiation (avoid price competition) 🡪 make demand Ped-inelastic 🡪 ↑P🡪↑TR

1. **YED**
2. Stock management – Need to know types of good to sell under different economic condition
3. Classification of goods – normal / inferior 🡪 price-sensitivity 🡪 develop price strategy

13.5 Explain how the producers will shut down production when the cost of production increases due to factors like an increase in price of oil

-Using the concept of elasticity of demand and supply

↑Oil price 🡪↑COP 🡪 need to ↑P to cover ↑COP but if demand is price-elastic🡪↑P🡪↓TR🡪make losses

∴The firm may cease production of goods with price-elastic demands (e.g. the economy for direct flight for long haul)

14.1. Explain and evaluate how PED can be used to help Starbucks ↑TR

1. Definition of PED/Value of PED – Price-elastic/Price-inelastic means?
2. Explain how to vary price according to value of PED to ↑TR

✓↑P🡪Ped is price-inelastic/↓P – Ped is price-elastic

✓Explain economic causation

✓Draw diagram and describe diagram

1. Explain why PED for Starbucks consumers will be price-elastic or price-inelastic

✓Degree of necessity of demand

✓Proportion of income spent on the good

✓Time period for consideration of purchase

✓Availability of substitute

14.2 Explain and evaluate how YED can be used to help Starbucks ↑TR

1. Definition of YED and value of YED –

Positive – Normal, Negative - Inferior

1. Usefulness of YED in helping Starbucks to ↑ TR

✓Derive information on consumer’s degree of price sensitivity to the types of coffee offered by Starbucks 🡪 derive price strategy 🡪↑TR

✓Understanding of the consumers in the classification of goods – raise market demand by selling the types of goods derived under different economic conditions (↑Y🡪 sell normal good market demand 🡪↑TR)

1. Explain how YED for Starbucks consumers is determined

✓Price of good/ proportions of income spent on the good

14.3 Explain and evaluate how XED can be used to help Starbucks ↑TR

1. Definition of XED and value of XED

Positive – Substitutes , Negative - Complementary

1. Usefulness of XED in helping Starbucks to ↑TR

✓Information on related goods 🡪conduct sales and marketing strategy

✓Complementary🡪joint promotion🡪↑market demand🡪↑TR

✓Substitutes – SR 🡪price strategy 🡪maintain competitiveness 🡪↑TR

– LR 🡪Promotion 🡪brand loyalty🡪shape PED to become price-inelastic🡪↑P🡪↑TR (avoid price competition)

14.4 Limitations of Elasticity of Demand

1. Time span is too long – economic data is inaccurate
2. Ceteris paribus condition cannot hold in the real world
3. Social variables are not accounted but significant in influencing consumer behaviour