***Price elasticity***

Elasticity refers to the ability to respond to a force. In physics it measures how far a material will change its shape when a force is applied. Elastic materials will stretch a long way when pulled, and will squash when squeezed. In economics, this concept is applied to goods and services. Price elasticity measure the quantity demanded or supplied to a change in price.

Demand and supply can be relatively elastic or inelastic. The more responsive quantity is to price the more elastic, the less responsive the more inelastic.

**Price elasticity of demand**

Elasticity is measured in proportional terms, that is, by what proportion quantity changes for a certain proportionate change in price.

Elasticity can range from perfectly elastic to perfectly inelastic as shown below

Perfectly elastic demand Elastic Demand

Inelastic demand Perfectly inelastic demand

Perfectly elastic demand

Consumer will buy an unlimited amount of this product at this particular price, nothing above or below.

E.g. Orange seller. If the price is higher then you’ll go somewhere else, if the price is lower the farmer makes no money

Elastic demand

If a price change leads to a larger percentage change in quantity then the product is elastic. E.g. a price increase of 5% may lead to a 10% fall in quantity.

Inelastic demand

Demand is inelastic when there is a larger percentage change in price than in quantity. E.g. a price increase of 10% may lead to a decrease in quantity by 5%.

Perfectly inelastic

This means that a given quantity of a product will be purchased regardless of the price. E.g. a product that is addictive – people don’t care what the price is, they’ll buy it anyway

***NB - Perfectly elastic and inelastic products are quite uncommon***

**Factors affecting elasticity of demand**

*Substitutes*

Products with close and available substitutes will be relatively elastic in nature because you will just buy something else instead E.g. butter instead of margarine.

*Necessity*

Products that are a necessity will be inelastic. That is, you will pay whatever price you need to in order to get it. E.g. A hardened smoker will pay anything for a pack of cigarettes.

*Durability*

Durable products E.g. fridges, lounges, TV’s etc… will be elastic in nature because if there is a change in price you’ll just hold off buying a new one until the price comes down.

*Complementary goods*

Goods that go with another product. E.g. Car and petrol. Usually, the most expensive item will be elastic while the less expensive item will be inelastic.

In this example, cars are durable and are therefore elastic, while you will pay almost any price for petrol because it’s a necessity.

*Relative cost*

Inexpensive items are likely to have inelastic demand curves. E.g. you will still buy a newspaper even if it went up by 10c. That 10c is not going to significantly affect your income. More expensive items, such as a holiday will have elastic demand.

**Activity**

In the table below, outline the features of elastic and inelastic demand

|  |  |
| --- | --- |
| **Elastic demand** | **Inelastic demand** |
| Goods with close substitutes | Goods without substitutes |
|  |  |
|  |  |
|  |  |
|  |  |

Explain what is meant by price elasticity of demand

Classify the following products as either elastic or inelastic

|  |  |  |
| --- | --- | --- |
| **Item** | **Elastic/Inelastic** | **Reason** |
| CD player |  |  |
| Apples to make apple sauce |  |  |
| Salt |  |  |
| Lounge chair |  |  |
| Bike helmet |  |  |
| Bus travel |  |  |
| Car registration |  |  |
| Houses |  |  |
| Petrol |  |  |
| Sauce to go on a meat pie |  |  |
| Bottled water |  |  |

Why is toothpaste inelastic, but brands of toothpaste elastic?

**Calculating elasticity using the Total Revenue (TR) method**

There are several methods of calculating elasticity – the TR method is probably the easiest. This method is calculated by the following formula:

TR = P x Q (Total Revenue = Price x Quantity)

|  |  |
| --- | --- |
|  | **Revenue** |
| **Decrease** | **Increase** |
| **Price** | **Increase** | Elastic | Inelastic |
| **Decrease** | Inelastic | Elastic |

**Activity**

Explain how the TR method can be used to determine the elasticity of demand for products

Use the TR method to determine if demand is elastic or inelastic in the following cases:

* At a price $2 the quantity demanded was 400. If the price increases to $3 the quantity demanded would be 300.
* If the price fell from $10 to $6 and the quantity demanded rose from 400 to 700
* Quantity demanded at a price of $20 was 500. When the price fell to $16 quantity demanded was 800

If demand was inelastic, would the producer increase or decrease price to increase total revenue? Explain.

If demand was elastic, would the producer increase or decrease price to increase total revenue? Explain.

Explain what is meant by perfectly elastic demand.

Explain what is meant by perfectly inelastic demand.

**Factors affecting elasticity of supply**

Elasticity can range from perfectly elastic to perfectly inelastic as shown below

Perfectly elastic supply Elastic supply

Inelastic supply Perfectly inelastic supply

***Its basically exactly the same as demand, just using the supply curve***

**Limits of supply elasticity**

Perfectly elastic supply

Producers will supply any quantity of a product at a given price. This happens when there is an inexhaustible amount of a resource

E.g. Sand to make glass

Elastic supply

If a price change leads to a larger percentage change in quantity then the product is elastic. E.g. a price increase of 5% may lead to a 10% rise in quantity.

Inelastic supply

Supply is inelastic when there is a larger percentage change in price than in quantity. E.g. a price increase of 10% may lead to a increase in quantity by 5%.

Perfectly inelastic supply

This means that there is a limited supply of a product. E.g. tickets to the Soccer World Cup Final to watch Italy win yet another title. ☺

This usually occurs at a specific point in time

**Factors affecting supply**

Elasticity of supply depends on how well producers respond to price changes. It depends on the following factors.

*Excess capacity*

This refers to buildings, machinery, and labour that can be used in production but are not being used at the present time. Firms operating at full capacity will not have excess capacity and therefore will not be able to increase supply in response to a price rise. Firms with excess capacity can more easily respond to changes in price.

*Availability of resources*

You can’t produce more if you can’t get the resources. Supply will therefore be more elastic if resources are plentiful.

*Production time*

If something has a long production time (E.g. agricultural products) it is very difficult, if not impossible, to respond to a price change since your crop is already in the ground.

*Ability to hold stocks*

Firms can hold their stock in their storehouses and limit how much they provide to the market. If a firm has the ability to hold their stocks (E.g. cars) then they are able to respond more quickly to a change in price. In stocks that are perishable there is a much shorter lifespan.

**Activity**

What is the difference between the law of supply and elasticity of supply?

Using diagrams demonstrate the difference between relatively elastic and relatively inelastic supply.

List and explain the main factors affecting price elasticity of supply. Use ONE example (for each factor) to clarify your answer.

With reference to some of the factors from the question above, explain the likely difference in the price elasticity of demand for Nike sports shoes and running shoes in general

Explain the difference between a perfectly elastic and perfectly inelastic supply curve

Explain how a knowledge of elasticity can be useful to both businesses and government.