

Worksheet on Elasticity

Step 1 - E L A S T I C or INELASTIC?

Price Elasticity of Demand is a measure of how responsive demand is to a change in price. If a price change leads to a considerably bigger change in quantity demanded, we would consider the good to be responsive to a price change: hence **elastic**. If, however, a similar price change leads to a much smaller change in demand, we would consider it **inelastic**.

To get a more precise measure than this of the responsiveness to a price change we can calculate a value for **price elasticity of demand**. We use the formula:

$$\text{PRICE ELASTICITY OF DEMAND} = \frac{\text{percentage change in Q demand}}{\text{percentage change in price}}$$

$$\text{PERCENTAGE CHANGE} = \frac{\text{Original Number} - \text{New Number}}{\text{Original Number}} \times 100$$

Use the formula above to calculate values of Price Elasticity for all the situations below:

| Price | | Quantity | | % change in quantity demanded | % change in price | Elasticity of Demand |
|----------------|------------|----------------|------------|-------------------------------|-------------------|----------------------|
| <i>Initial</i> | <i>New</i> | <i>Initial</i> | <i>New</i> | | | |
| 25 | 30 | 100 | 40 | | | 1. _____ |
| 40 | 70 | 120 | 90 | | | 2. _____ |
| 200 | 220 | 80 | 64 | | | 3. _____ |
| 50 | 75 | 150 | 135 | | | 4. _____ |

In each case identify whether you would describe it as **elastic** / **unitary elastic** / **inelastic**

1. _____

2. _____

3. _____

4. _____

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Step 2 - E L A S T I C MONEY?

Different elasticity values will lead to different effects on the level of total revenue a firm receives. For example, if a good is elastic and a firm increases the price, by say 10%, they will lose **more than** 10% of their business, and so although they are getting more money for each one they sell, they are selling far fewer.

To see the effect that elasticity has on total revenue, fill in the table below:

| Price | | Quantity | | Revenue | | Price Elasticity of Demand |
|----------------|------------|----------------|------------|----------------------------|---------------------------|----------------------------|
| <i>Initial</i> | <i>New</i> | <i>Initial</i> | <i>New</i> | <i>Before price change</i> | <i>After price change</i> | |
| 25 | 30 | 100 | 40 | | | 1. _____ |
| 40 | 70 | 120 | 90 | | | 2. _____ |
| 200 | 210 | 80 | 64 | | | 3. _____ |
| 50 | 75 | 150 | 135 | | | 4. _____ |

Has revenue increased or decreased in each case?

1. _____

2. _____

3. _____

4. _____

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Step 3 - What determines E L A S T I C I T Y?

As we have seen above it is important to a company to have an idea of the value of the elasticity of demand of its good or service as it will affect what happens to their total revenue as price changes. What should the company aim to do with their price in each of the circumstances below?

| Elasticity | Change in price to increase total revenue?? (Increase or decrease price?) |
|------------|--|
| Elastic | |
| Inelastic | |

If the company wants to estimate the value of the price elasticity of their product, then they need to judge it against the following criteria:

- **Proportion of income spent on the good** - the lower the proportion of income spent, the more inelastic the good will tend to be
- **The number of substitutes** - the more substitutes a good has the easier it is for consumers to switch to another product if the price goes up
- **The strength of the brand** - the stronger the brand, the more inelastic the product will be
- **The level of necessity or addiction** - the more necessary or addictive something is, the more inelastic it will be

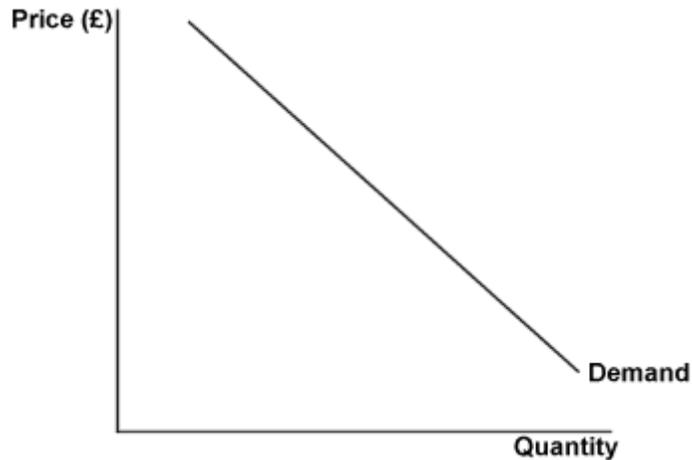
Judge the products in the table below to decide whether you think they will be elastic or inelastic:

| Product | Elastic or inelastic? | Reasons? |
|----------------------------|-----------------------|----------|
| A box of matches | | |
| A luxury vacation | | |
| 'Heinz' Ketchup | | |
| Computers - home users | | |
| Computers - business users | | |
| Cigarettes | | |
| Rubber bands | | |

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Step 4 - E L A S T I C brands? (not bands!)

As we saw above, the strength of the brand will affect the elasticity. The stronger the brand, the more likely people are to buy it whatever the price. Draw a new demand curve on the diagram below to show the effect of a major advertising campaign that strengthens the brand:



We can see this effect if we consider the price of a well-established consumer product - JEANS. To see the effect, try estimating the price of a brand name pair of jeans - say Levis, and then estimate the price of an equivalent pair of unbranded jeans (or perhaps a less well-known brand). Fill these prices in the table below:

| Brand/Make | Price |
|------------|-------|
| | |
| | |

Write a short explanation (referring to price elasticity where possible) of why these different brands of jeans differ in price.
