

## Chapter 7: Price elasticity of demand

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- Price elasticity: defines how *price changes* will affect the *demand* for a good
- Demand curve gives the relationship the price of a good and its demand
- **Price elastic demand:** relationship between the responsiveness of demand and a change in price
- Price *inelastic* demand: change in demand is not as big as the change in price (e.g., petrol)
- Price *elastic* demand: change in demand is greater than the change in price (most goods are price elastic demand)
- Calculation of price elasticity of demand:

- Formula:

$$\text{Price elasticity of demand} = \frac{\text{Percentage change in quantity demanded}}{\text{Percentage change in price}} \quad (1)$$

- In practice:

$$\text{Percentage change} = \frac{\text{Difference between the two numbers}}{\text{Original number}} \times 100 \quad (2)$$

- *see* example page 36
- Interpretation of numerical values of price elasticity of demand
  - if price elasticity < 1: demand is **inelastic**
  - if price elasticity > 1: demand is **elastic**
  - Note: We consider the *absolute value* of price elasticity!
- Factors influencing price elasticity of demand: mainly *ease* with which customers can switch between products
  - *Time*: Price elasticity of demand tends to fall the longer the time period considered (e.g., petrol may be elastic at short-run since people *have* to use cars, but in the long-run they may switch to other transportation, which will make it inelastic)
  - *Competition for the same product*: In markets that have a lot of *perfect substitutes*, prices will be *highly elastic* (e.g., farmers)
  - *Branding*: Branding reduces the price elasticity of demand for the product
  - *Proportion of income spent on a product*:

- \* if proportion of income spent on product is *very small*: demand will be price *inelastic* (e.g., box of matches)
- \* if proportion of income spent is *high*: demand will be price *elastic* (e.g., car)
- *Product types vs the product of an individual business*: While a demand for a good may be price inelastic (e.g., petrol), the same good may be characterized by high price elasticity when considering the demand at the individual suppliers (e.g., Esso, Shell)
- Question: Why not keep the prices low such that demand will be *price inelastic*?
  - A *profit-maximizing* firm should continue raising price until demand is price elastic
  - As long as the *profit-maximizing* level is not reached, raising prices will raise revenues
- Price elasticity of demand and pricing:
  - Price elasticity of demand will determine the *price setting* of a business
  - if demand is price inelastic: rising the prices will not significantly reduce the demand (e.g., UK gas and electricity has been continuously rising prices with no change in demand)
  - if demand is price elastic: rising prices will affect the demand and this may then not be a good strategy
  - however if demand is price elastic, a fall in prices will also have a (positive) effect on demand (e.g., Lidl, Aldi)
- Price elasticity of demand and total revenue:
  - Change of a particular price on total revenue

Price elasticity	Value of elasticity	Price change	Effect on total revenue
inelastic	$< 1$	decrease	fall
inelastic	$< 1$	increase	rise
elastic	$> 1$	decrease	rise
elastic	$> 1$	increase	fall

- If businesses know the value of price elasticity for their products, they can predict the effect on total revenue

## Chapter 8: Income elasticity of demand

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- Income elasticity: measures the responsiveness of demand to a change in income
  - Demand for a product is *income elastic*: means that the change in demand is *proportionately greater* than the change in income (e.g., cars, fashion accessories, entertainment, holidays, luxury goods).
  - Demand for a product is *income inelastic*: means that the change in demand is *proportionately less* than the percentage change in income (e.g., milk, food, heating fuel).

- Calculation of income elasticity of demand:

$$\text{Income elasticity of demand} = \frac{\% \text{ change in quantity demanded}}{\% \text{ change in income}} \quad (3)$$

- income elasticity  $> 1$  (*demand is income elastic*): change in demand is proportionately greater than change in income
- income elasticity  $< 1$  (*demand is income inelastic*): change in demand is proportionately less than the change in income
- income elasticity can also tell us whether a good is a *normal good* or an *inferior good*
  - \* *normal good* (positive value): increase in income results in *increase* in demand
  - \* *inferior good* (negative): increase in income results in *decrease* in demand
- *Factors* that influence income elasticity of demand
  - If goods are *necessities*: goods that consumers *need* to buy.
  - If goods are *luxuries*: goods that consumers like to buy if they can afford it.
- *Price* of a product:
  - Relatively *cheap* products will be *income inelastic*
  - Relatively *expensive* products will be *income elastic*
- Businesses may use income elasticity of demand in order to *predict* how changes in income (in the economy) will affect the demand for their products:
  - Businesses selling goods with *high* income elasticity
    - \* these goods are often *cyclical* (very sensitive to changes in income)

- \* Example: air travel, restaurants, luxury goods
- \* Difficult to *forecast* demand for goods that depend on *business cycles*
- Businesses selling goods with *low* income elasticity
  - \* these goods are more *stable* through the business cycle
  - \* Example: basic goods (farmed products)
  - \* in countries with *steady economic growth*, the demand for *inferior goods* and *normal necessities* tends to decline
- Production planning
  - \* if businesses *know* the income elasticity of demand for their products they can respond to predicted changes in incomes
  - \* Cases:
    1. Products have *income elastic demand*: changes in income will affect goods. Expansion → ensure that there is enough capacity; Recession → cut output (e.g., car industry in 2008 crisis)
    2. Products that are *inferior goods* prepare production when recession is coming (demand for inferior goods *increase* when income goes down)