What is a market?

The **market** for a good or service consists of all those producers willing and able to supply it and all those consumers willing and able to demand it. A market exists where there are buyers of a good (Demand) and sellers of a good (Supply).

demand goods and services to satisfy their needs and wants

supply goods and services to earn profits

What is a market?

Examples of markets include the following:

- Supermarket where food is bought and sold
- Stock Market – e.g. the FTSE 100 index or the Nasdaq index, where shares are bought and sold

Note that there is not a market for certain goods. E.g. there is no market for a drink which gives eternal life, as although there is a demand, there is no supply. Equally there is no market for sand in the desert. Lots of supply but no demand.

Prices play a vital role within a market economy. The **price mechanism** is the means by which millions of decisions of consumers and businesses interact to determine the allocation of resources between different goods and services. Firstly prices have a **signaling function** – if prices are rising because of stronger demand from consumers, this is a signal to suppliers to expand output to meet the higher demand. Higher prices act as an **incentive** to raise output because the supplier stands to make a **higher profit** from selling extra units.

Prices also serve to **ration** scarce resources when demand outstrips available supply. When there is a shortage of a product, the market price rises – leaving only those with a willingness and ability to buy with the effective demand necessary to purchase the product. Conversely a glut (or surplus) of a particular product in the market will drive prices down.

How many fizzy drinks?

If cans were $5 each

If cans were 10 cents each

Many producers

Few consumers

Few producers

Many consumers

Demand Curves

- The amount of a good or service consumers are willing and able to buy is known as the **quantity demanded** of that product.
- Economists measure the quantity demanded of a particular good or service at a certain price over certain periods of time, e.g. the number of oranges bought per week.
- Individual demand is the demand of one consumer, while market demand for a product is the total demand for that product from all of its consumers

A Change in Quantity Demanded

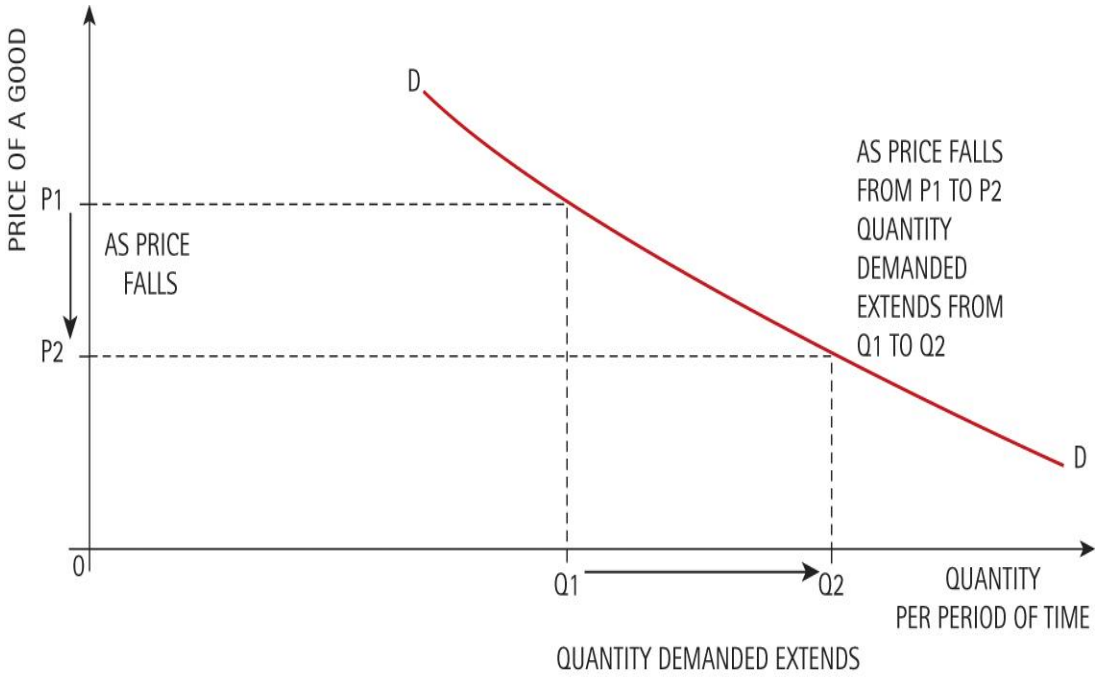
The want or willingness of consumers to buy a product

To be an **effective demand** a consumer must have enough money to buy the product

As **price rises**, the **quantity demanded** by consumers **contracts**

As **price falls**, the **quantity demanded** by consumers **extends**

A **demand** curve slopes downwards



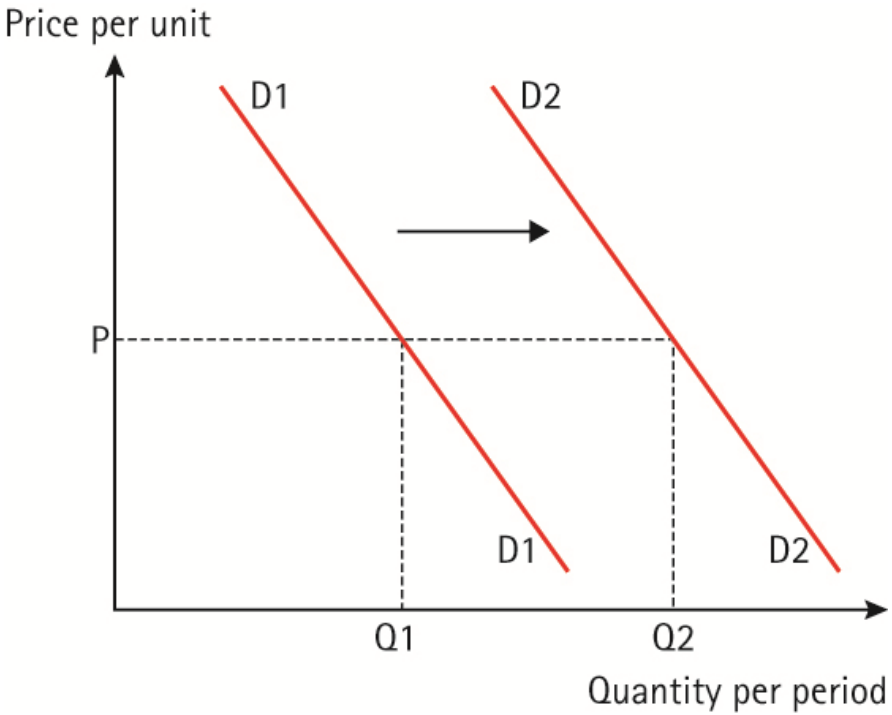
Discuss what factors, other than price, might cause this demand to change, e.g. incomes, tastes or the prices of other goods, and how this might be shown on the graph.

Key Point Summary

- **Consumer demand** for a given product is the want or willingness of consumers to buy that product. An effective demand only exists when consumers have sufficient money to buy the products
- The **market demand** for a good or service is the total effective demand of all consumers willing and able to buy that product
- Individual and market **demand curves** are downward sloping. As price rises, demand contracts. As price falls, demand extents as consumer can afford to buy more with their income.

A Change in Demand

The sum of all individual consumer demands for a particular product



A rise in demand

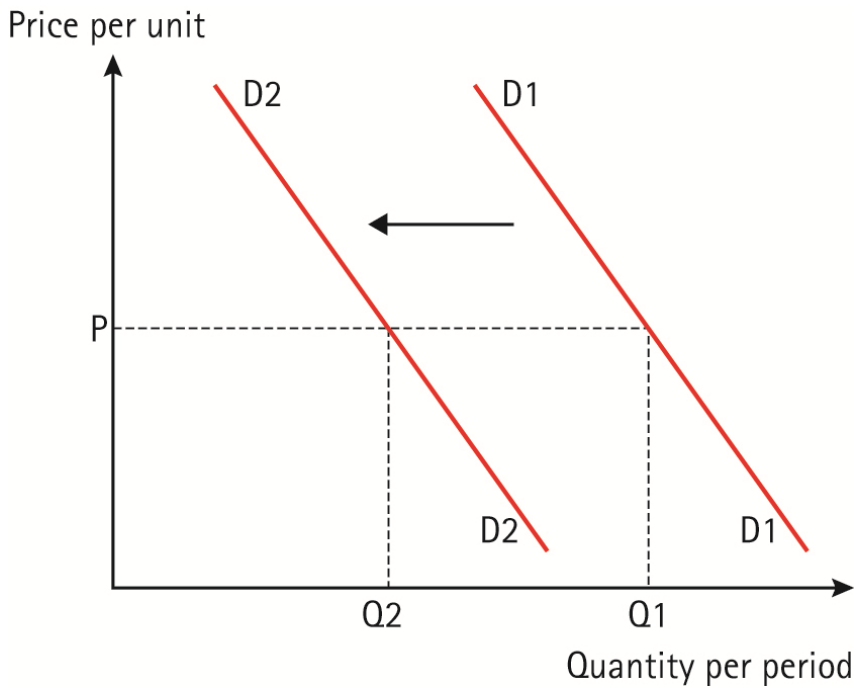
The market demand curve shifts outwards

Possible causes are:

- an increase in disposable incomes after tax
- a rise in the price of substitutes
- a fall in the price of a complement
- tastes and fashion favour the product
- an increase in advertising
- a rise in the population
- other factors, e.g. hot weather increases demand for cold drinks and sun creams

Market demand

The sum of all individual consumer demands for a particular product



A fall in demand

The market demand curve shifts inwards

Possible causes are:

- a fall in disposable incomes after tax
- a fall in the price of substitutes
- a rise in the price of a complement
- tastes and fashion favour other products
- a reduction in advertising
- a fall in the population
- other factors, e.g. hot weather reduces the demand for winder coats

Increase in demand vs. Increase in quantity demanded

- **A change in quantity demanded**

  A change in quantity demanded refers to the response of consumers to changes in the **PRICES** of commodities.
  >> Involves a ***movement*** along the demand curve

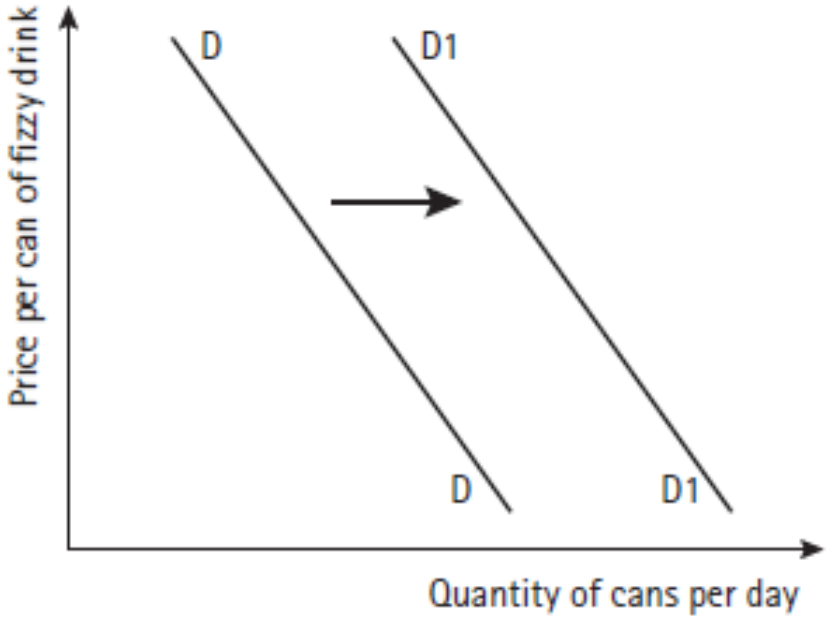
- **A change in demand**

  A change in demand refers to an increase or decrease in demand brought about by a change in the conditions of non-price determinants.
  >> Involves a ***shift*** in the demand curve (to the left or right)

Activity 2.11: What causes a shift in demand

Article	1a Factor that has changed	1b Impact on demand
Income tax cut in Malaysian Budget	Income after tax has increased	Increase in demand for many products
World population growth	Increase in number of consumers	Increase in demand for many products
Demand for online music services soars	Fall in price on personal music players	Increase in demand for music downloads
Australia raises interest rate	Increase in cost of borrowing; increase in return to saving	Fall in demand for many goods and services as demand for loans falls and people also save more
India tries to keep its cool	Hot weather	Increase in demand for ice cream and soft drinks

Activity 2.11: Demand Curve



DD = market demand curve before hot weather; D1D1 = market demand during hot weather

Substitutes and complements

Substitutes can satisfy the same want

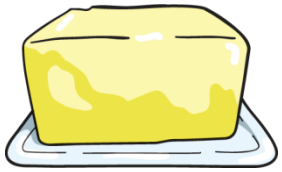
or

or

or

Complements are in joint demand

+



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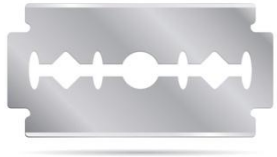
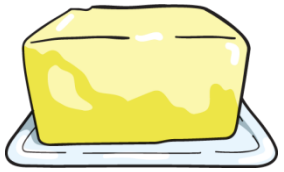


What is likely to happen to the demand for cars if the price of petrol increases dramatically?

Demand for cars will fall. Therefore a rise in the price of a complement can lead to a drop in demand or conversely the rise in the price of a substitute (Bus) could lead to a rise in demand for cars.

or

+



or

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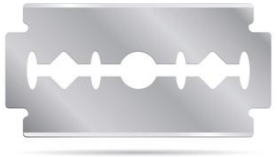


Income and demand

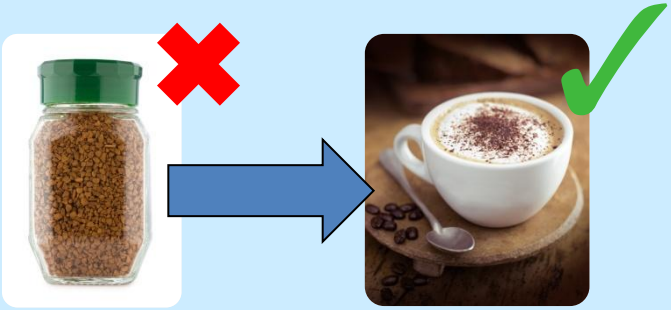
But will a rise in consumer income always lead to an increase in demand for a product?

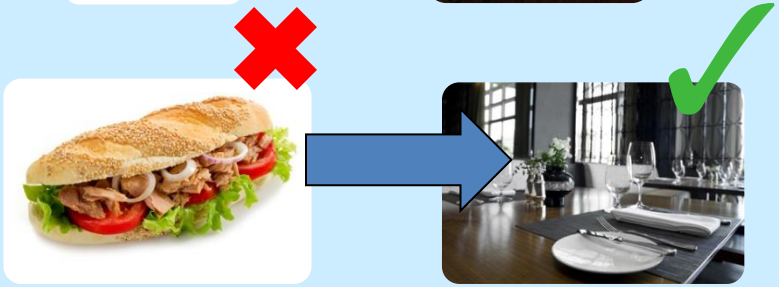
Yes, if the product is a normal good

As income rises, consumers are willing and able to buy more

No, if the product is an inferior good

As income rises, consumers buy less as they switch their demand to other more preferable products





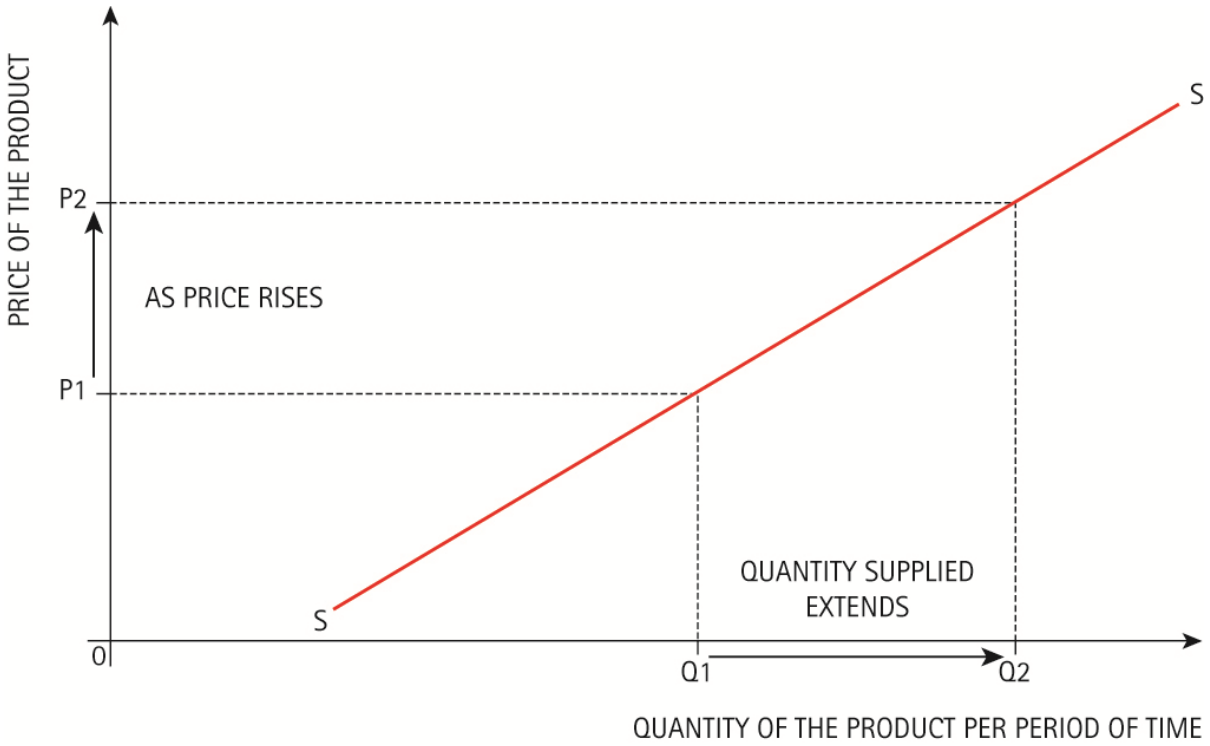
Movement along the Supply Curve

The willingness and ability of firms to make a product available to consumers

As **price rises**, the **quantity supplied** by producers **extends** because production becomes more profitable

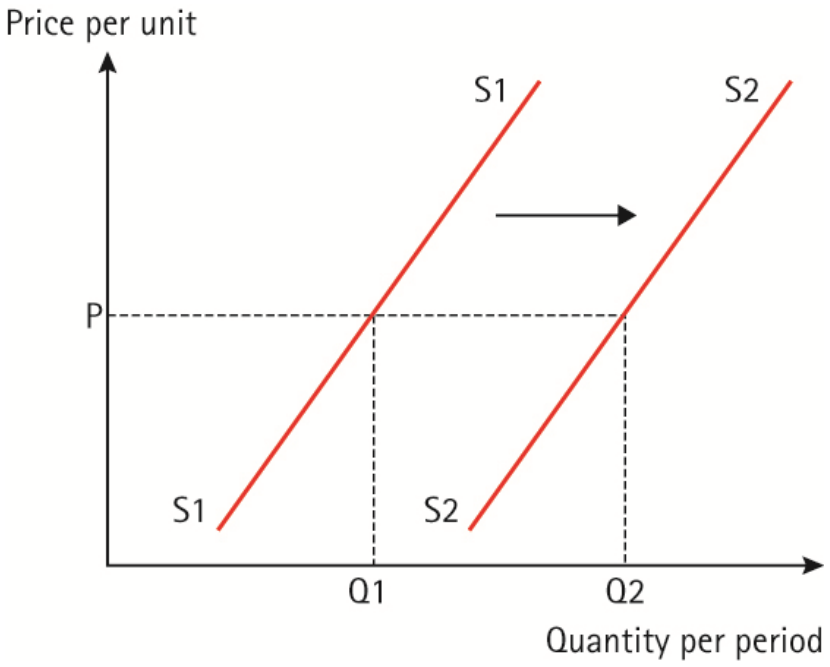
As **price falls**, the **quantity supplied** by producers **contracts** because production becomes less profitable

A **supply** curve slopes upwards



Shift of the Supply Curve

The sum of all individual producers' decisions about the supply of a particular product



A rise in supply

The market supply curve shifts outwards

Possible causes are:

- other products become less profitable to produce
- a fall in the cost of factors of production
- an increase in the supply of resources
- technical progress and improvements in production processes and machinery
- an increase in business optimism and expectations of profit
- the government subsidizes production and/or cuts taxes on profits
- other factors, e.g. good weather boosts crop harvests

Shift of the Supply Curve

- A shift of the supply curve represents an increase or decrease in the quantity supplied at each & every price. Several factors that can cause a shift in supply:
- Improvements in technology (can increase efficiency & reduce costs).
- Weather, climate and disease (especially agricultural products).
- Taxes and subsidies can make the costs of production more/less expensive and therefore increase or decrease supply.
- Natural disasters & wars can severely disrupt supply.
- Resources: discoveries of new resources or depleting reserves of resources can affect the supply of products

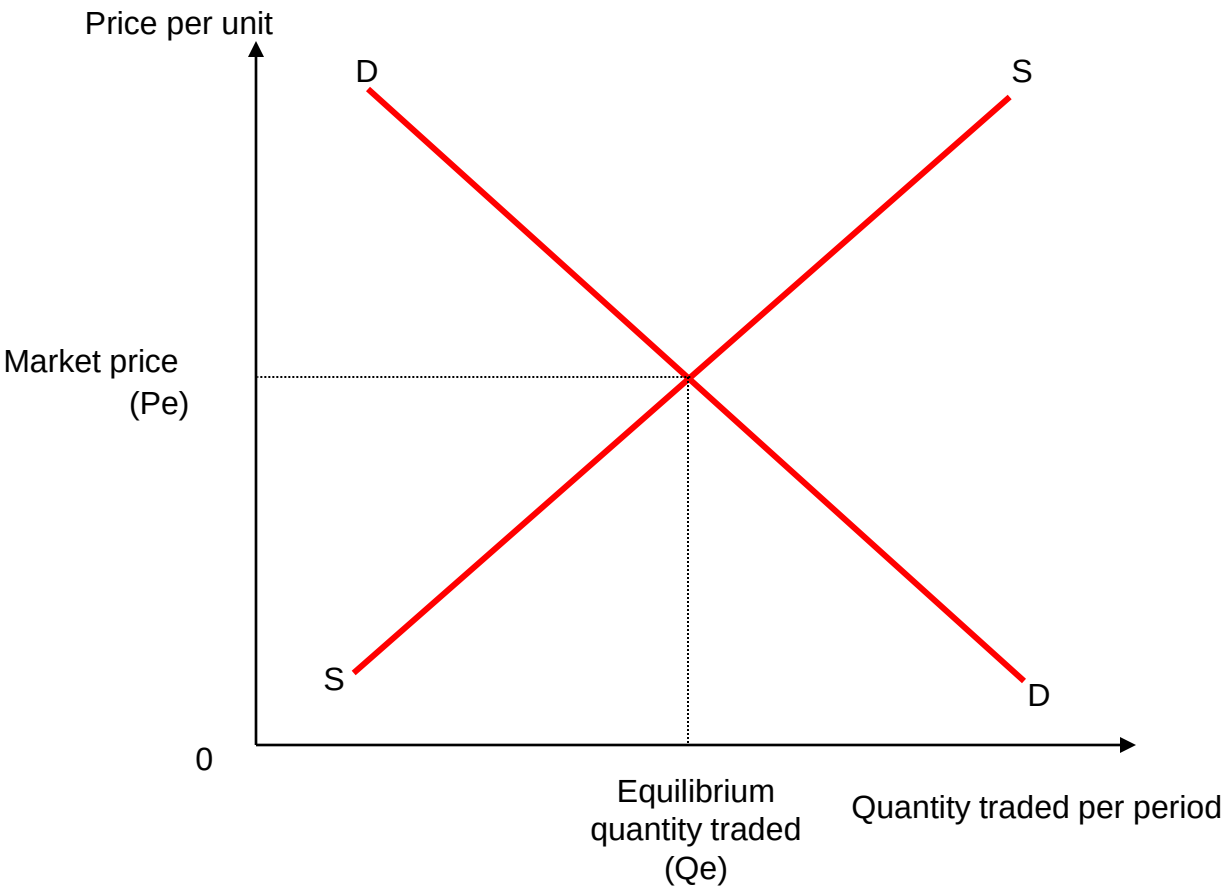
A market is in **equilibrium** where market demand equals market supply

At the equilibrium **market price** the quantity consumers wish to buy is exactly equal to the quantity producers wish to sell

If a market is in equilibrium there are no pressures to change the market price

For example, if pizza firms produce exactly the quantity that pizza consumers are willing to buy, there will be no pressure for the price of pizza to change.

Market equilibrium

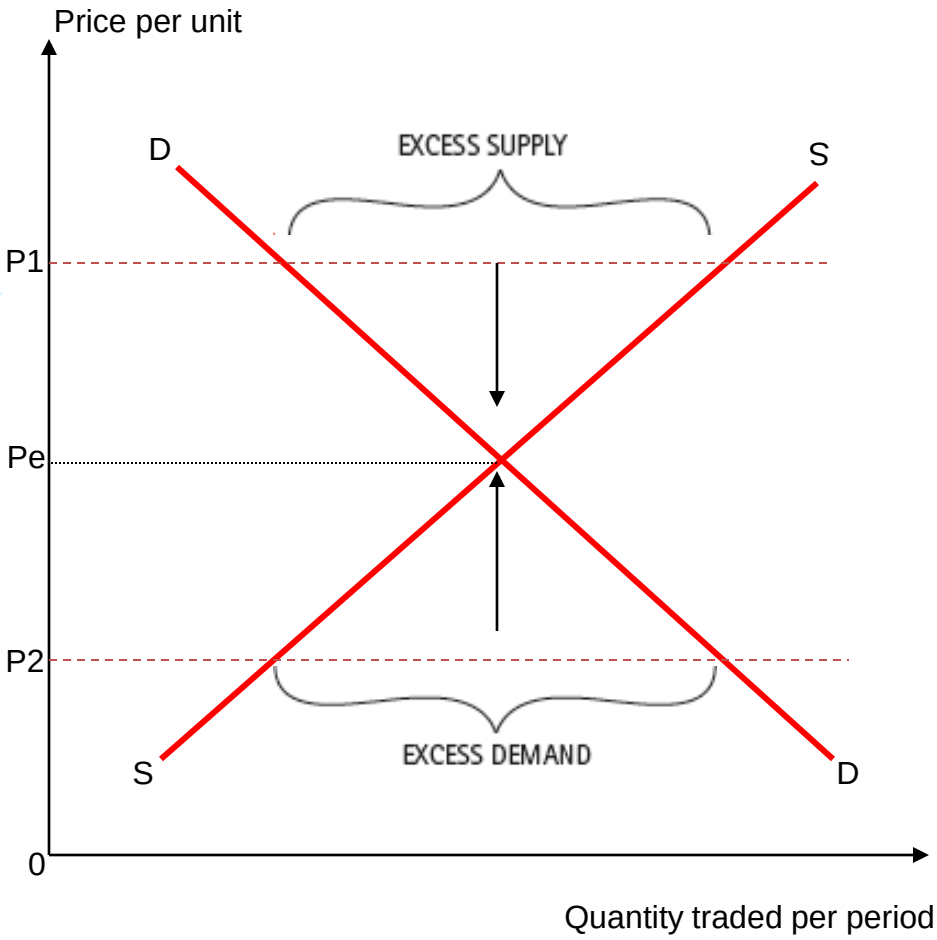


Market disequilibrium

A market is in **disequilibrium** if the quantity consumers wish to buy is not matched by the quantity producers wish to sell

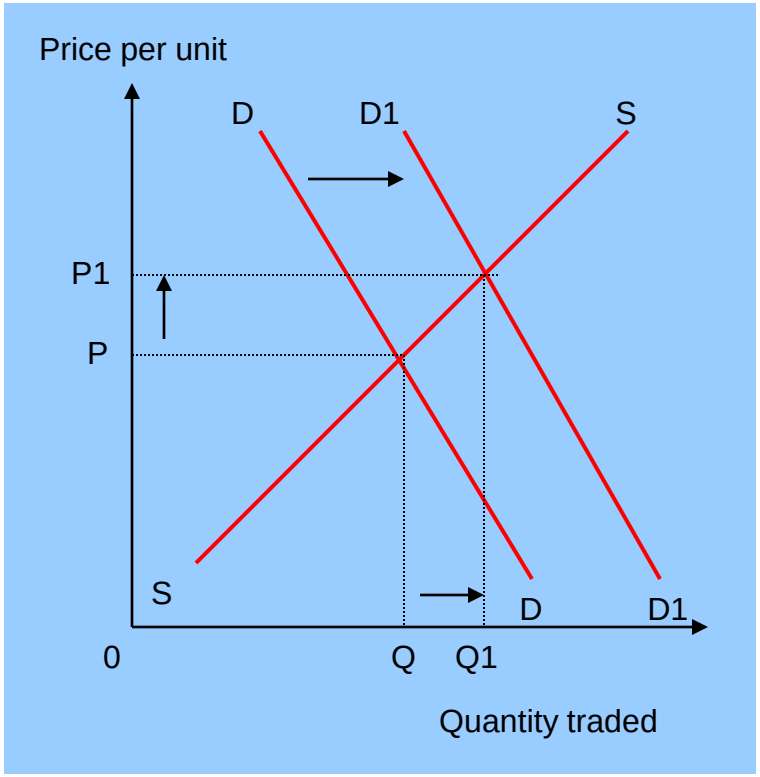
At price P1 there is an **excess supply**. Price will need to fall to persuade consumers to buy more and for producers to contract their supply.

At price P2 there is an **excess demand**. Price will need to rise to reduce consumer demand and to encourage producers to supply more.



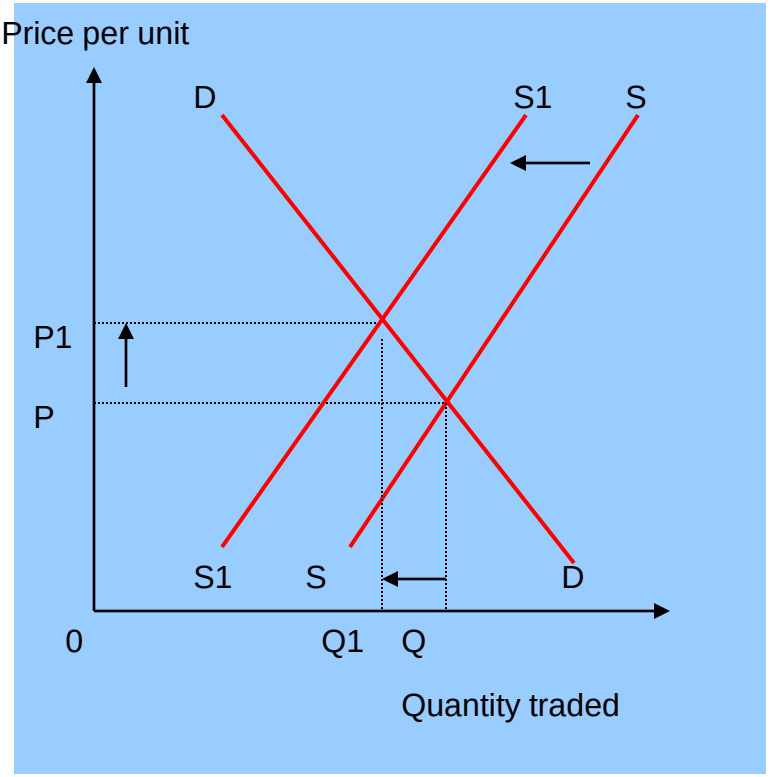
An increase in market price

If market demand rises



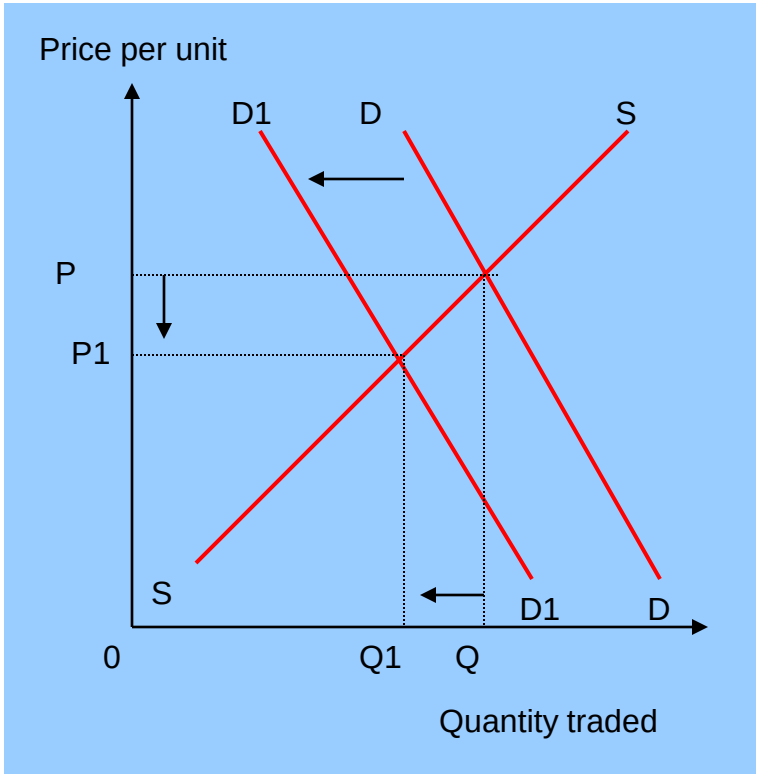
OR

If market supply falls



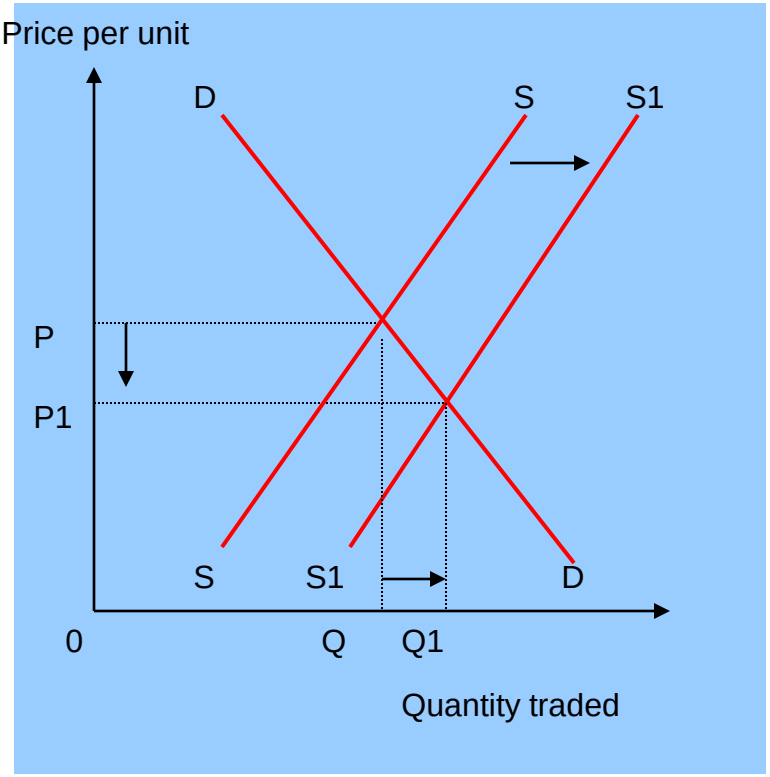
A decrease in market price

If market demand falls



OR

If market supply rises



What is price elasticity of demand? (PED)

PED measures how much the quantity demanded changes in relation to a change in price

To calculate it:

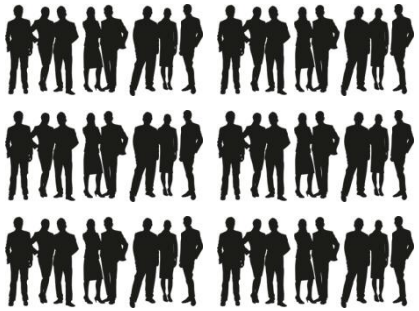
$$\text{PED} = \frac{\%\text{ change in quantity demanded}}{\%\text{ change in price}}$$

How responsive is demand to changes in price?

Before…

If demand is relatively elastic

After…



a small change in price causes a relatively large change in quantity demanded

Price elasticity of demand

How responsive consumer demand is to a change in price, and therefore how revenues may respond following a change in price

INELASTIC

▲ **Peak travel per day**
Old fare $4
Number of passengers 100
Total revenue = $400

New fare $5
Number of passengers 95
Total revenue = $475

Percentage change in price = $1 / $5 = 20%

Percentage change in passenger numbers = 5 / 100 = 5%

Price elasticity of demand = 20% / 5% = 4

ELASTIC

▲ **Off peak travel per day**
Old fare $2
Number of passengers 50
Total revenue = $125

New fare $2.50
Number of passengers 40
Total revenue = $100

Percentage change in price = $0.5 / $2.00 = 25%

Percentage change in passenger numbers = 10 / 50 = 20%

Price elasticity of demand = 20% / 25% = 0.8

Price elasticity of demand

Demand for a product will be **price elastic** if:

>

% change in quantity demanded is greater than the % change in price

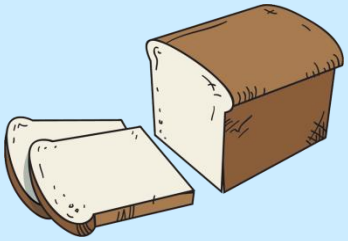
PED > 1

Characteristics of price elastic goods:

- the product has many close substitutes consumers can buy instead if the price rises, e.g. different washing detergents
- the product is expensive, such as many luxury items, so even a small increase in price may be unaffordable
- consumers do not need to purchase the product frequently so they have time to search for alternatives if price rises

Price elasticity of demand

Demand for a product will be **price inelastic** if:



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% change in quantity demanded is less the % change in price

PED < 1

Characteristics of price elastic goods :

- the product has very few close substitutes for consumers, e.g. electricity
- the product is a low-cost item, e.g. a daily newspaper or box of matches
- the product is an essential item and needed regularly, e.g. many basic food items such as bread, rice and vegetables

Assume there is a rise of about 10% in the prices of the following goods. State whether there is likely to be a large, small or no change in the quantity demanded.

Product	Small or large change in quantity demanded	Price elastic or price inelastic	Why?
Electricity			
Luxury holiday			
Bread			
A Toyota car			
A newspaper			

Product	Small or large change in quantity demanded?	Price elastic or inelastic?	Why?
Electricity	Small	Inelastic	Essential, few substitutes
Luxury holiday	Large	Elastic	Expensive, non-essential item
Bread	Small	Inelastic	Essential
A Toyota car	Large	Elastic	Luxury, expensive item with many close substitutes
A newspaper	Small	Inelastic	Low-cost item

Price elasticity of supply

- Price elasticity of supply measures the responsiveness of the supply of a product to changes in its price.
- Supply tends to become more elastic over time as additional resources to increase output can be secured.
- For example, in the short run, the supply of many foodstuffs and naturally occurring products will be highly price inelastic because it takes them time to grow, locate and or excavate them.
- The supply of goods than can be stored easily, inexpensively, and for a long period of time will be more elastic than products that spoil easily

Figure 1. Elastic Supply Curve

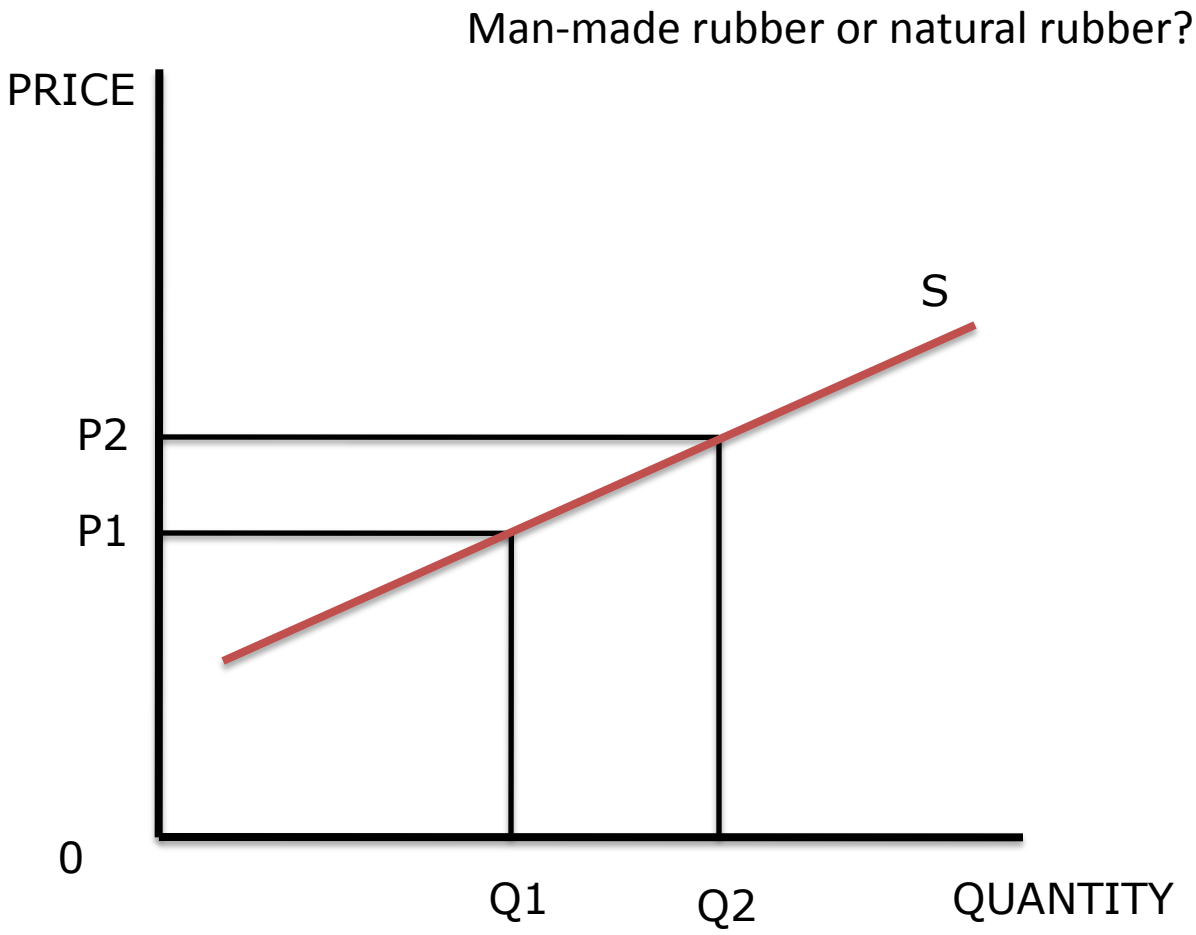
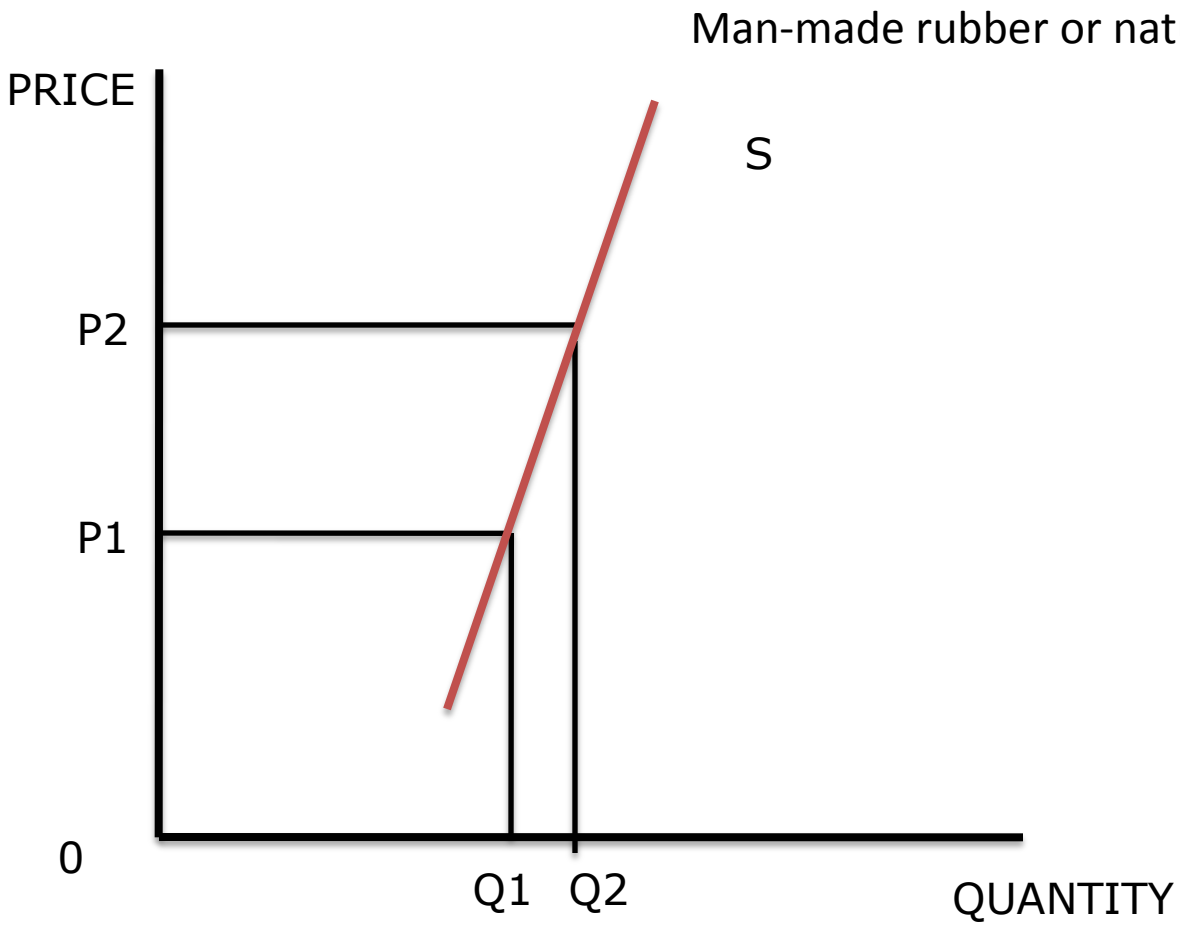


Figure 2. Inelastic Supply Curve



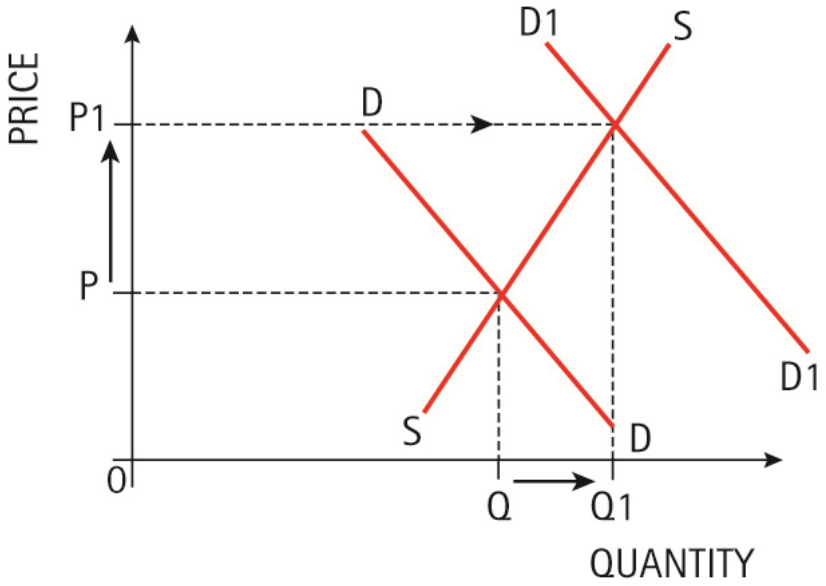
Price elasticity of supply

How responsive producer supply is to a change in price

Supply is price inelastic

When the % change in quantity supplied is less than the % change in price

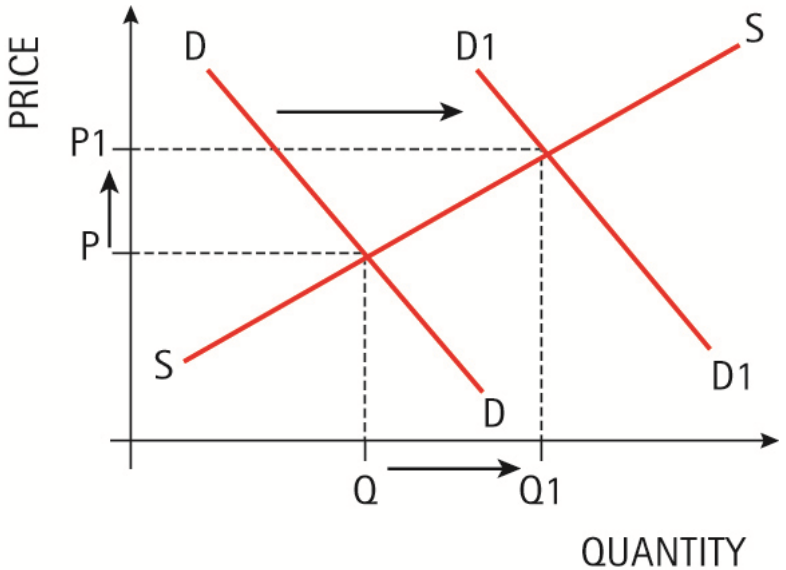
PES < 1



Supply is price elastic

When the % change in quantity supplied is greater than % change in price

PES > 1



Taxes, subsidies and market outcomes

Indirect taxes can be added to the prices of goods and services

But why do governments want to increase the prices and restrict the supply of some products?

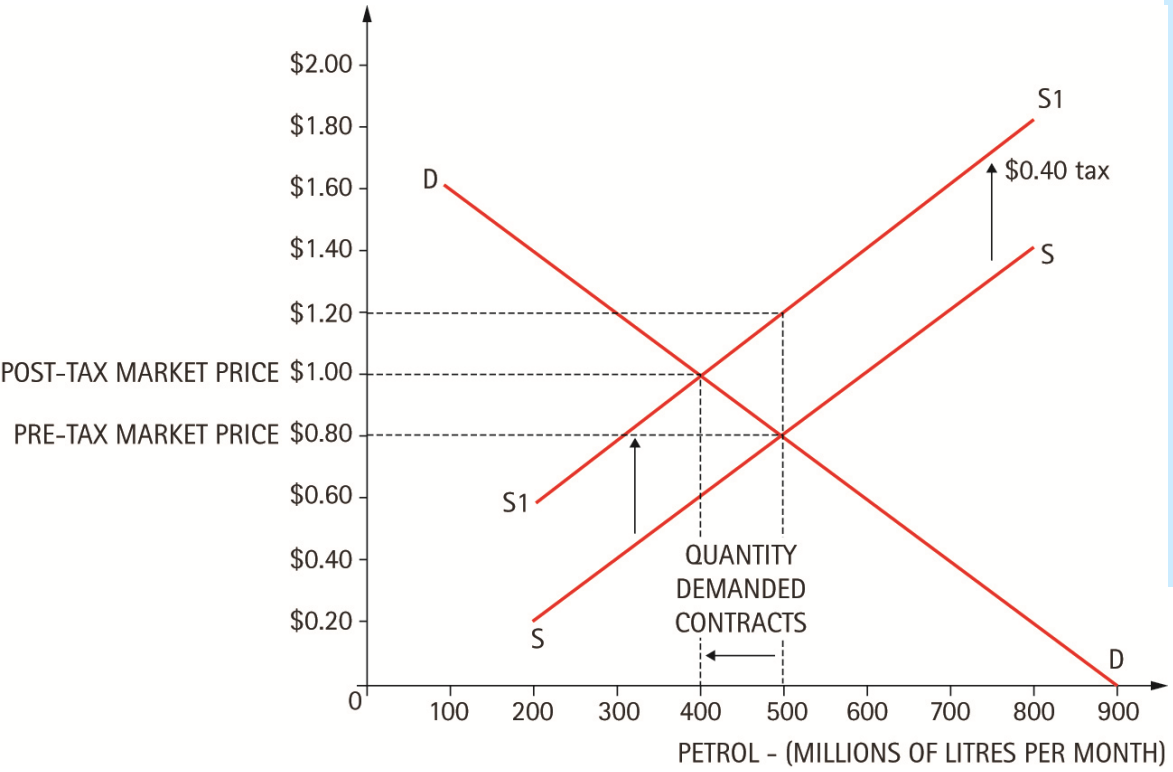
- *to discourage their consumption because it can be harmful, e.g. cigarettes*
- *to reduce their production because it can be harmful, e.g. the burning of oil and gas releases harmful emissions*
- *to conserve limited natural resources, e.g. taxes on energy and water use*

Subsidies can be paid to producers towards their costs of production

But why do governments want to increase the supply and reduce the prices of some products?

- *to make products more affordable for those on the lowest incomes, e.g. basic foodstuffs*
- *to encourage their consumption because it can be beneficial, e.g. medicines*
- *to encourage their development and production because it is beneficial and creates employment, e.g. wind turbines and solar energy panels*

The effect of an indirect tax

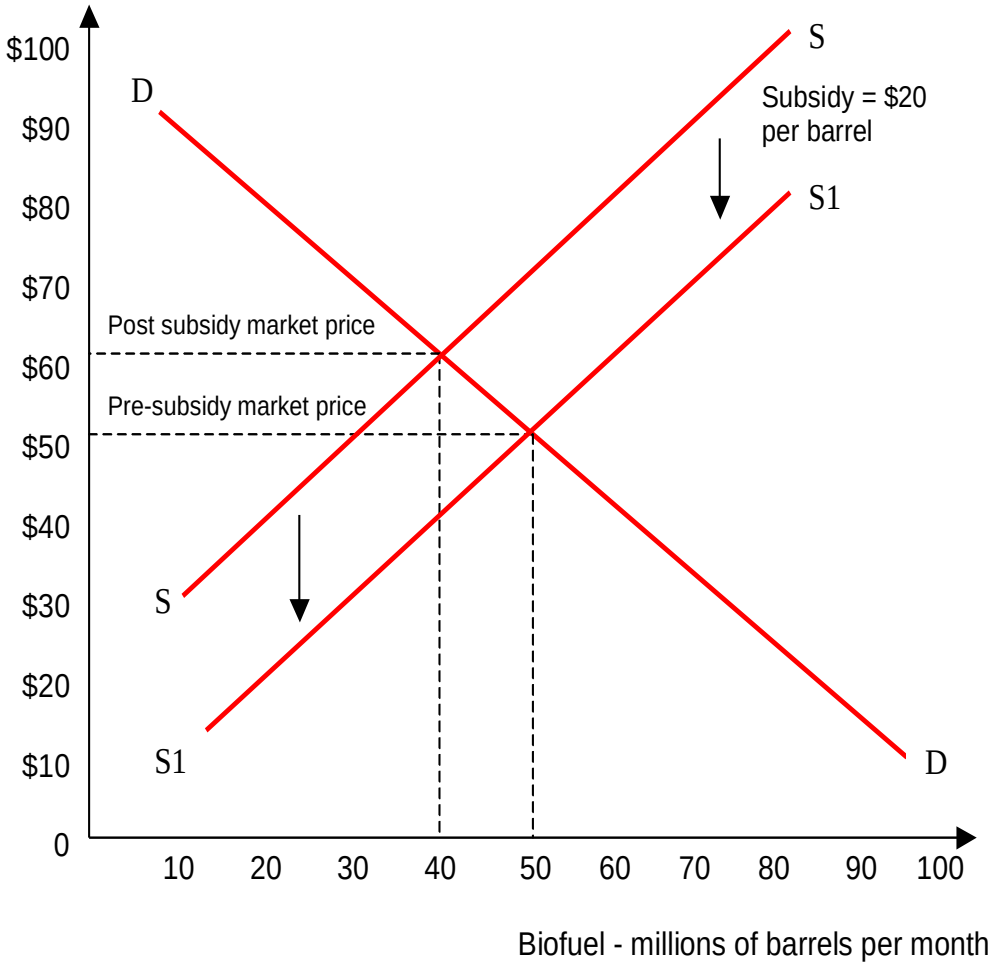


Objective: to reduce harmful exhaust emissions by the reducing the consumption of petrol

Before tax of 40 cents per litre: 600 million litres of petrol are traded each month at the market price of 80 cents per litre

After tax of 40 cents per litre: 500 million litres of petrol are traded each month at a new market price of $1 per litre

The effect of a subsidy



Objective: to encourage the production and consumption of biofuel

Before a subsidy of $20 per barrel: 40 million barrels of biofuel are supplied and traded each month at the market price of $60 per barrel

After a subsidy of $20 per barrel: 50 million barrels of biofuel are supplied and traded each month at a new market price of $50 per barrel

Social costs and benefits

Private costs and benefits

Private sector firms

Aim to maximize their profits

Private costs = wages, rents, components, insurance premiums, telephone bills, electricity, etc.

Private benefits = revenue from the sale of products to consumers

Consumers

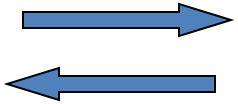
Aim to maximize their utility (or satisfaction)

Private costs = payments for goods and services

Private benefits = satisfaction from consuming the products they buy

Market failure

Some producers and consumers may ignore the harmful effects of their production and consumption decisions and activities on other consumers, firms and the environment



because they are only concerned with their own private costs and benefits

External costs

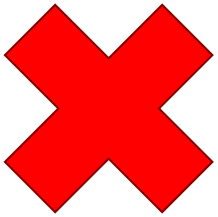
Social benefits

Total social benefit = private benefits + external benefits

An economic use of resources?

If total social benefit > total social cost

Economic welfare can be improved by encouraging more production and consumption



If total social cost > total social benefit

Economic welfare can be improved by reducing production and consumption

Correcting market failure

How can a government in a mixed economy ensure that firms and consumers take account of the external costs and benefits of their decisions and actions?

India to enforce new regulations to curb noise pollution

The Australian government has banned live cattle exports to Indonesia until safeguards are adopted to end the brutal slaughter of animals

The Chinese government announces 18 recycling projects are to receive government subsidies covering up to 50% of total investment costs

Government unveils plan to tax the carbon emissions of the worst polluters

Tax on landfill to increase by 20% as the government attempts to reduce the amount of waste that ends up in the ground.

South Africa bans plastic bags to reduce litter

Retailers caught handing out the bags now face a fine of 100,000 rand ($13,800) or a 10-year jail sentence

Correcting market failures

To reduce external costs

- Raise taxes on firms with activities that create external costs to reduce those firms' after-tax profits, e.g. taxes on emissions from the use of fossil fuels, on landfill waste and mineral extraction
- Increase indirect taxes on products that are considered harmful to raise their prices and discourage their consumption, e.g. taxes on cigarettes, petrol, plastic bags
- Use regulations and fines to discourage the production or consumption of products or activities that are harmful, e.g. smoking bans, planning controls, legal limits on air and water pollutants, anti-litter laws

To increase external benefits

- Ensure public sector provision of socially and economically desirable goods and services, e.g. providing free vaccinations and education, public parks, public transport and roads
- Provide subsidies to private sector firms to reduce the cost of activities and products that have external benefits, e.g. subsidies for recycling, renewable energy, organic farming
- Use regulations to encourage firms to change their production methods, e.g. rules to phase out traditional light bulbs to encourage a switch to low-energy light bulbs, health and safety regulations, animal welfare laws

Correcting market failure

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South Africa bans plastic bags to reduce litter

Retailers caught handing out the bags now face a fine of 100,000 rand ($13,800) or a 10-year jail sentence

- Use regulations and fines to discourage the production or consumption of products or activities that are harmful, e.g. smoking bans, planning controls, legal limits on air and water pollutants, anti-litter laws

Government unveils plan to tax the carbon emissions of the worst polluters

Tax on landfill to increase by 20% as the government attempts to reduce the amount of waste that ends up in the ground.

- Raise taxes on firms with activities that create external costs to reduce those firms' after-tax profits, e.g. taxes on emissions from the use of fossil fuels, on landfill waste and mineral extraction

The Chinese government announces 18 recycling projects are to receive government subsidies covering up to 50% of total investment costs

- Provide subsidies to private sector firms to reduce the cost of activities and products that have external benefits, e.g. subsidies for recycling, renewable energy, organic farming

The Australian government has banned live cattle exports to Indonesia until safeguards are adopted to end the brutal slaughter of animals

- Use regulations to encourage firms to change their production methods, e.g. rules to phase out traditional light bulbs to encourage a switch to low-energy light bulbs, health and safety regulations, animal welfare laws