

# Economics Part 2

Demand, Supply & Price

# Retrieval

1. What does the Primary economic sector deal in?
2. What does the secondary economic sector deal in?
3. What does the tertiary economic sector deal in?
4. What is specialisation?
5. What is division of labour?
6. Give 3 possible gains from specialisation

# Answers

1. Land economic resource
2. Manufacture/production
3. Service/support of primary and secondary sectors.
4. Process by which an economy focuses resources to become more efficient at meeting the needs of the population.
5. When a firm allows individual employees to specialise in individual roles.
6. Higher output, More variety of high quality goods, Lower prices.

# Demand

- Demand refers to the quantity of a good or service that consumers are willing and able to buy at given prices over a given period of time. A household may demand goods and services; however, in order for the demand to become effective, the household must be able to pay for the goods and services. This is referred to as effective demand, where the demand for a good or service is backed by an ability to pay.

# Demand Curves

- A demand curve for a good An individual demand curve for a normal good slopes downwards from left to right; i.e. there is an inverse relationship between price and quantity demanded. As the price of a normal good falls, the quantity demanded rises, and vice-versa.

# Demand Curves

- A demand curve for a good An individual demand curve for a normal good slopes downwards from left to right; i.e. there is an inverse relationship between price and quantity demanded. As the price of a normal good falls, the quantity demanded rises, and vice-versa. (We will draw these next lesson)
- There are some goods for which demand falls as the price falls. Such goods are referred to as inferior goods and are commonplace, particularly with today's rapid pace of technological advancement; e.g. as updated models of the iPhone are brought to the market, consumers stop buying the older models, in spite of the fact that they are cheaper.

# Changing Demand

- The factors of demand are:
  - The price of substitute goods; e.g. an iPhone and a Samsung phone
  - The price of complementary goods; e.g. DVD players and DVDs
  - Personal disposable income; i.e. an individual's post-tax income
  - Interest rates; i.e. the reward for saving and the cost of borrowing
  - Tastes and preferences
  - Population size

# Changing demand

- A rightward shift of a demand curve may be caused by:
  - An increase in the price of a substitute good (a substitute is a good which can be replaced by another good); e.g. if the price of an iPhone increases, the demand for Samsung phones will increase
  - A fall in the price of a complementary good (a complementary good is a good which is demanded because it is used with another good); e.g. if the price of DVD players rises, the demand for DVDs will fall
  - An increase in personal disposable income; e.g. if an individual's personal disposable income rises, there will be an increase in demand for normal goods (Note: the demand for an inferior good would decrease)
  - A reduction in interest rates; e.g. the cost of borrowing money falls then individuals are more inclined to borrow in order to finance the purchase of a new car or other luxury items. Similarly, individuals are less inclined to save as the reward for saving, in terms of the interest rate, has been reduced hence, individuals are more inclined to spend
  - A successful advertising campaign
  - An increase in population size



# Supply

- Supply refers to the quantity of a good or service that firms or producers are willing and able to supply at a given price over a given period of time.
- The supply curve for a good slopes upwards from left to right; i.e. firms will supply more of a good at a higher price. This stems from the firms' desire to maximise their profits. As a firm's profits are the difference between a good's selling price and its cost of production, firms will increase supply in order to take advantage of the higher prices, and potentially higher profits.

# Changing Supply

- The following factors affect the level of supply
  - The costs of production
  - Technology
  - Taxes
  - Subsidies
  - Weather
  - The prices of other goods
  - The number of firms in an industry.

# Changing Supply

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- An increase in the price of a substitute good (a substitute is a good which can be replaced by another good); e.g. if the price of an iPhone increases, the demand for Samsung phones will increase
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- A successful advertising campaign
- An increase in population size

# Changing Price

- We have considered how changes in the conditions of demand and supply can cause the demand and supply curves to shift. Shifts in demand and/or supply will affect the equilibrium price, quantity demanded and quantity supplied.

# Independent Task 10 Minutes

Use the information in the table below to construct a market demand curve for chocolate bars (remember to fully label your diagram).

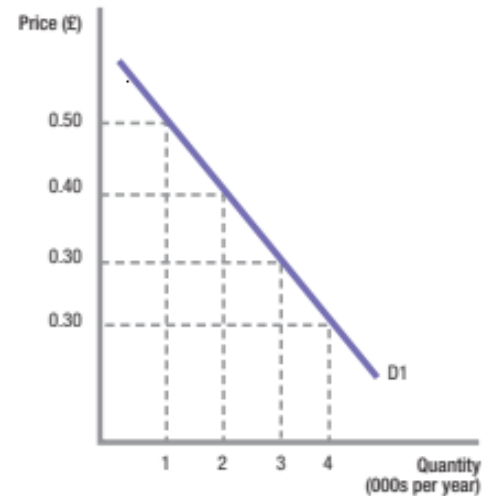
Price (£)	Demand (000s per year)
0.20	4
0.30	3
0.40	2
0.50	1

Explain what would happen to the demand for chocolate bars in the following instances:

- An increase in advertising spending by the chocolate manufacturer
- A television campaign outlining the dangers associated with eating too many sugary foods; and
- A reduction in consumers' disposable income.

# Independent Task Answers

Use the information in the table below to construct a market demand curve for chocolate bars (remember to fully label your diagram).



Explain what would happen to the demand for chocolate bars in the following instances:

- ▶ An increase in advertising spending by the chocolate manufacturer  
**A rightward shift in the demand curve**
- ▶ A television campaign outlining the dangers associated with eating too many sugary foods; and  
**A leftward shift in the demand curve**
- ▶ A reduction in consumers' disposable income.  
**A leftward shift in the demand curve**

# Independent Task

## ACTIVITY 2

Use the information in the table below to construct a market supply curve for chocolate bars (remember to fully label your diagram).

Price (£)	Demand (000s per year)
0.20	2
0.30	4
0.40	6
0.50	8

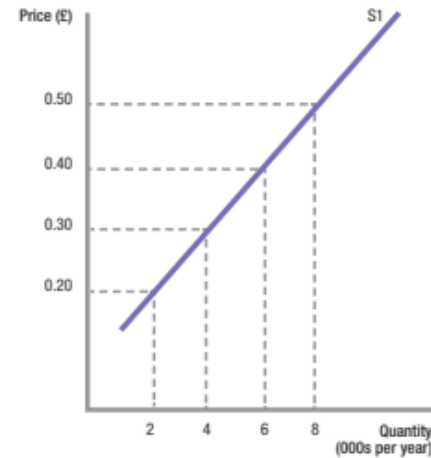
Explain what would happen to the supply of chocolate bars in the following instances:

- An increase in the number of firms in the industry;
- An increase in the national minimum wage; and
- An increase in the rate of VAT.

# Independent Task Answers

## ACTIVITY 2

Use the information in the table below to construct a market supply curve for chocolate bars (remember to fully label your diagram).



Explain what would happen to the supply of chocolate bars in the following instances:

- An increase in the number of firms in the industry;  
**Market supply would increase causing supply curve to shift rightwards**
- An increase in the national minimum wage; and  
**Cost of production would increase causing supply curve to shift leftwards**
- An increase in the rate of VAT.  
**Increase the cost of selling products. Supply curve to shift leftwards**



# Retrieval

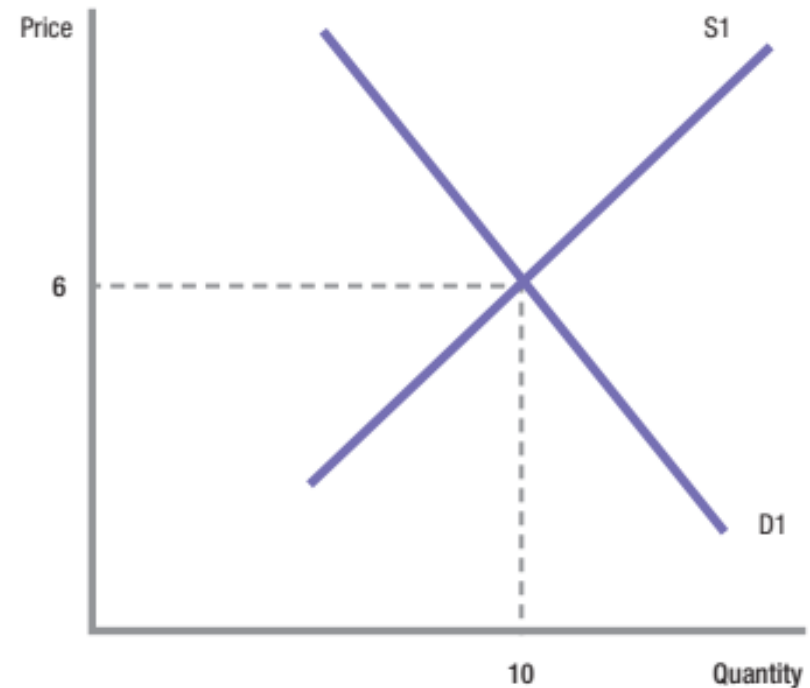
1. What are the three economic sectors?
2. Give one advantage of specialisation
3. Give one factor that can affect supply
4. Give one factor which can affect demand

# Answers

1. Primary/secondary/tertiary
2. Higher output/variety of high-quality goods/Lower prices
3. The costs of production/Technology/Taxes/Subsidies/Weather/The prices of other goods/The number of firms in an industry.
4. The price of substitute goods/The price of complementary goods/Personal disposable income/Interest rates/Tastes and preferences/Population size

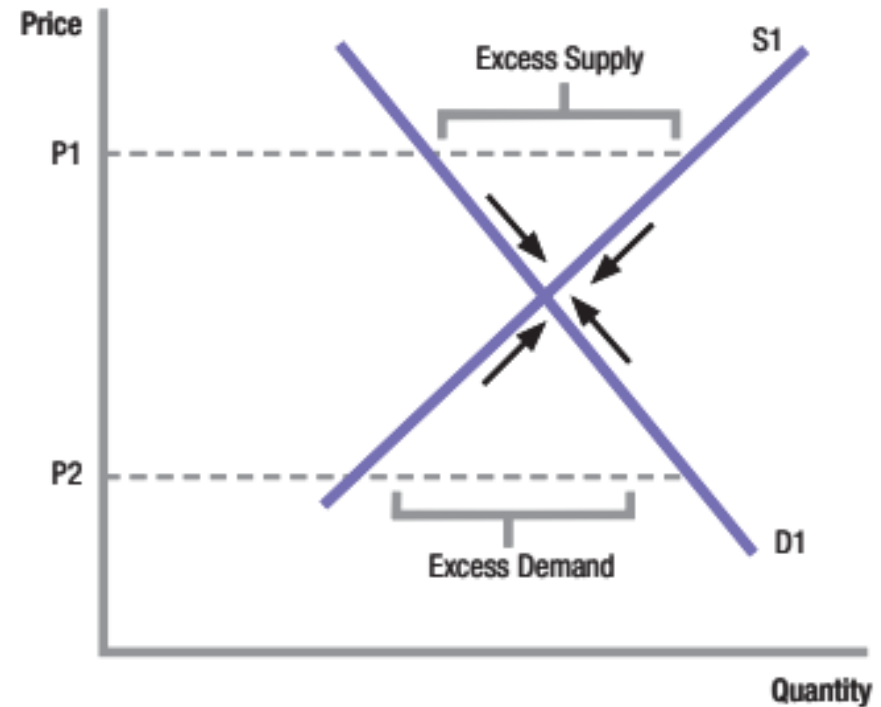
# Equilibrium Price

- A market brings buyers into contact with sellers. In other words, firms which supply goods and/or services are able to trade with the buyers who demand the goods and/or services.
- The point at which demand is equal to supply is referred to as the market-clearing price or the equilibrium price.



# Excess demand/supply

- Any point where demand does not equal supply is referred to as disequilibrium. It is often the case that markets do not clear and remain in disequilibrium. At any price above the equilibrium price, there is excess supply, and, at any price below the equilibrium price, there is excess demand.

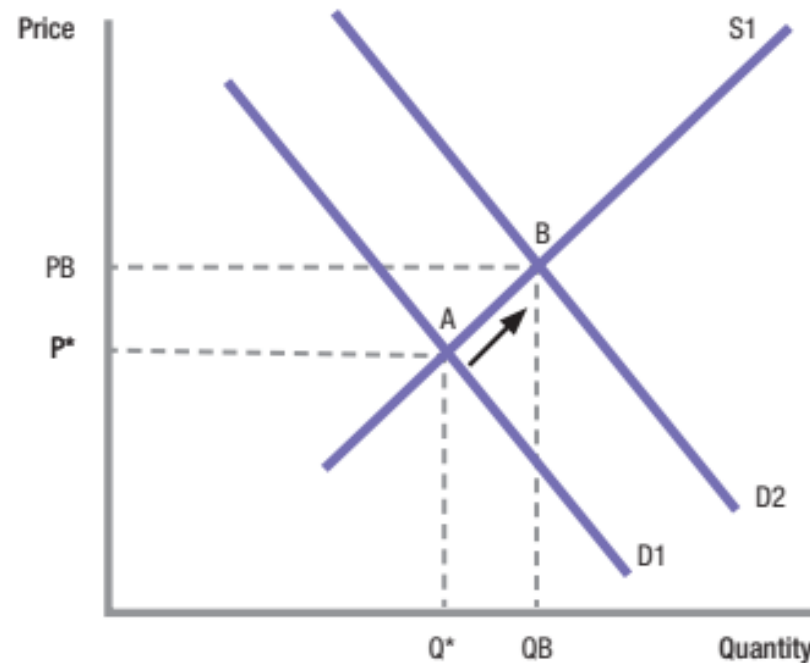


# Excess demand/supply

- In theory, an excess supply of goods and/or services should encourage producers to lower their prices in order to clear the market. Consequently, price should fall until the market clears at its equilibrium level. Excess demand for a good and/or service should cause the price to rise in order to ration the good and/or service. Consequently, price should increase until the market clears at its equilibrium level

# Understanding impacts on equilibrium.

- Consider the diagram below where the demand curve has shifted to the right, caused by an increase in personal disposable incomes.

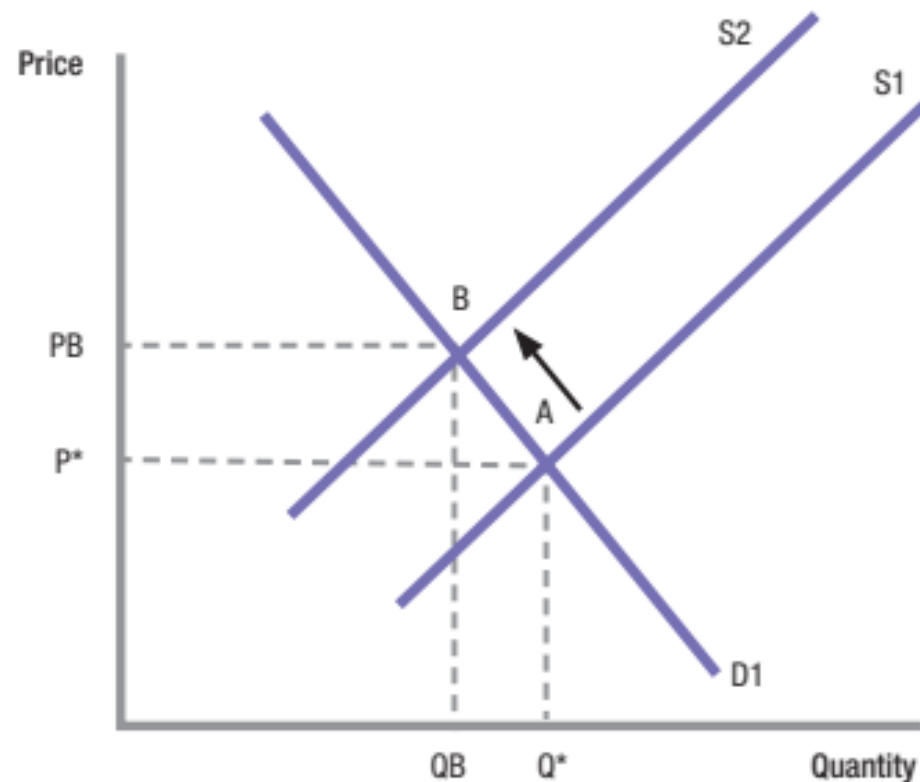


# Understanding impacts on equilibrium.

- Initial equilibrium is at point A where price is  $P^*$  and quantity demanded and supplied is at  $Q^*$ . An increase in personal disposable incomes causes the demand curve to shift to the right and a new equilibrium is formed where the market clears at point B. As a result of the demand curve shifting to the right, price rises to  $P_B$  and quantity demanded and supplied increase to  $Q_B$ . The demand curve has shifted and there has been an expansion of supply.

# Understanding impacts on equilibrium.

- Consider the diagram below where the supply curve has shifted to the left, caused by an increase in wage costs.



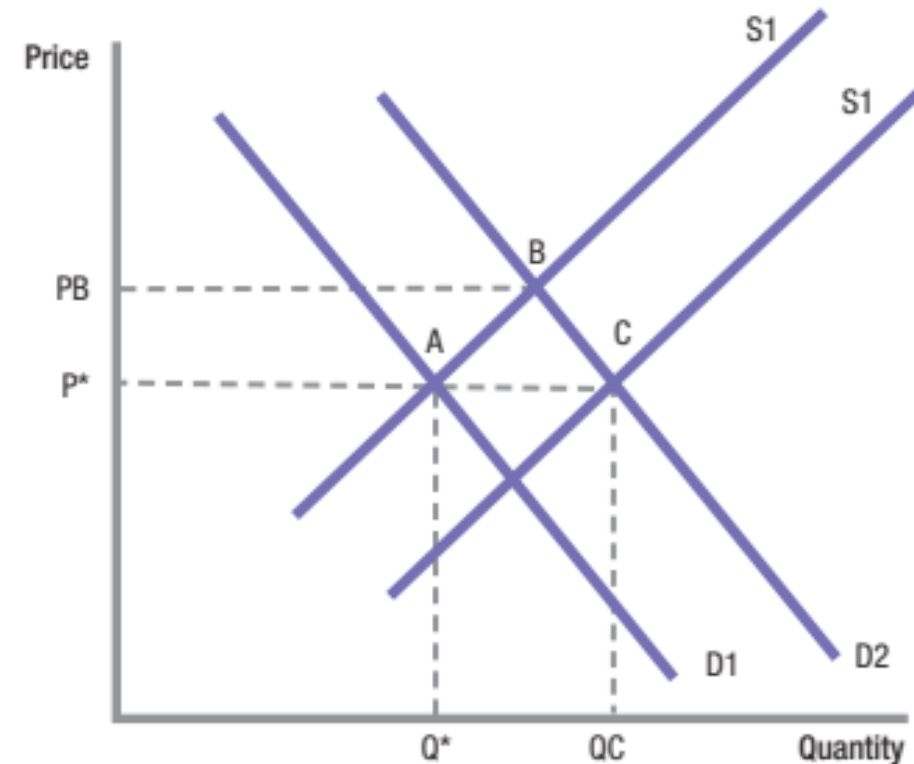


# Understanding impacts on equilibrium.

- Initial equilibrium is at point A where price is  $P^*$  and quantity demanded and supplied is at  $Q^*$ . An increase in wage costs causes the supply curve to shift to the left and a new equilibrium is formed where the market clears at point B. As a result of the supply curve shifting to the left, price rises to  $P_B$  and quantity demanded and supplied decreases to  $Q_B$ . The supply curve has shifted and there has been a contraction of demand.

# Understanding impacts on equilibrium.

- In some instances, the demand and supply curves may both shift. Consider our first example where the demand curve shifted to the right, caused by an increase in personal disposable incomes.
- We could further develop this model from equilibrium point B. At point B, price has increased from  $P^*$  to  $P_B$ , and this increase in price may attract more firms into the industry as they see a potential profit-making opportunity.
- Consequently, the supply curve shifts to the right and a new equilibrium is formed at C. As a result of new firms entering the industry, the supply curve shifts to the right and there is an expansion of demand.



# Independent Task

## ACTIVITY 3

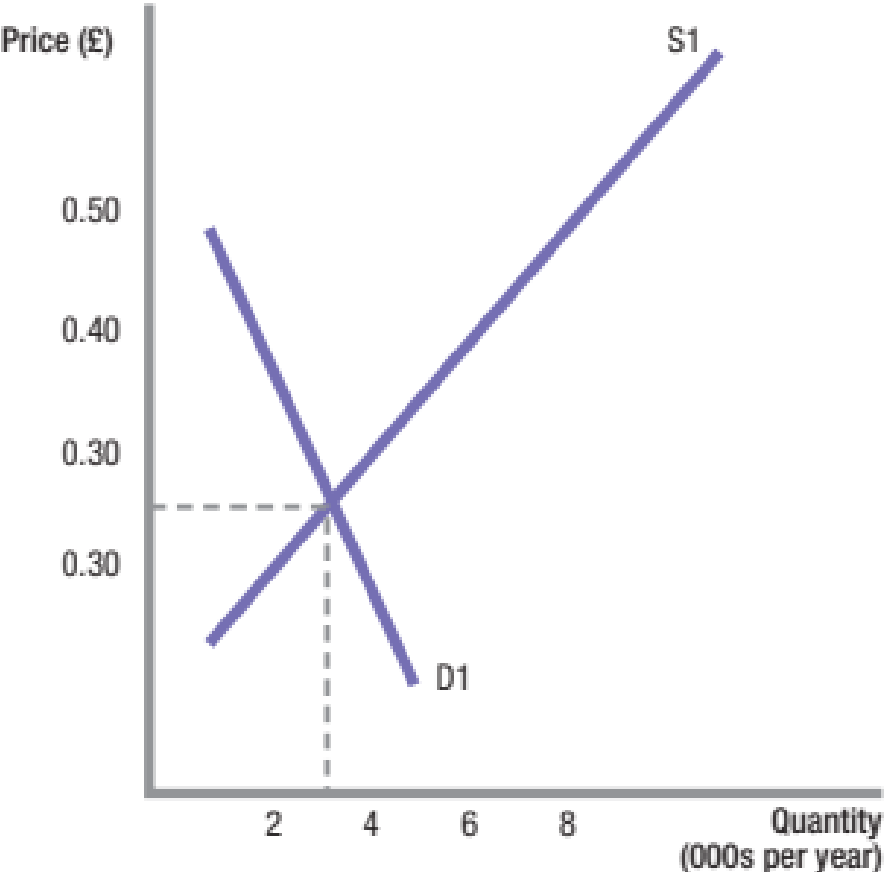
Use the information in the table below to construct a demand and supply diagram:

Price (£)	Demand (000s per year)	Supply (000s per year)
0.20	4	2
0.30	3	4
0.40	2	6
0.50	1	8

Identify the equilibrium price and quantity.

Explain what would happen to the equilibrium price, quantity demanded, and quantity supplied, if there was an increase in the population.

# Answers



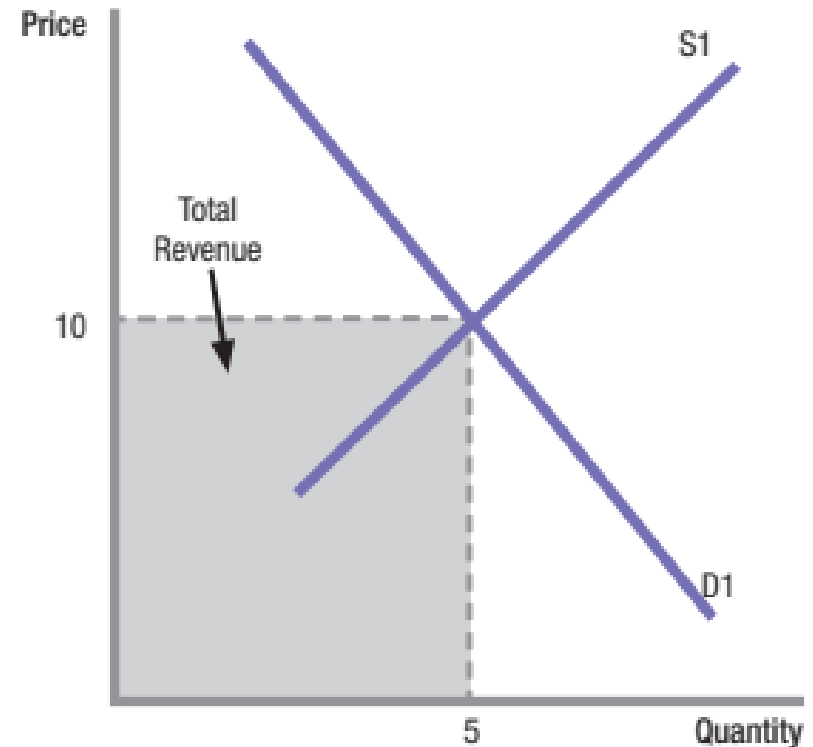
# Retrieval

PRICE (£)	DEMAND (1000's of units)	SUPPLY (1000's of units)
30	8	2
40	7	4
50	6	6
60	5	8
70	4	10

- 1) Draw a demand/supply diagram for the information above.
- 2) indicate on the graph and give co-ordinate values for the equilibrium point.
- 3) Describe and explain what would happen to the equilibrium point if there was an increase in population size.

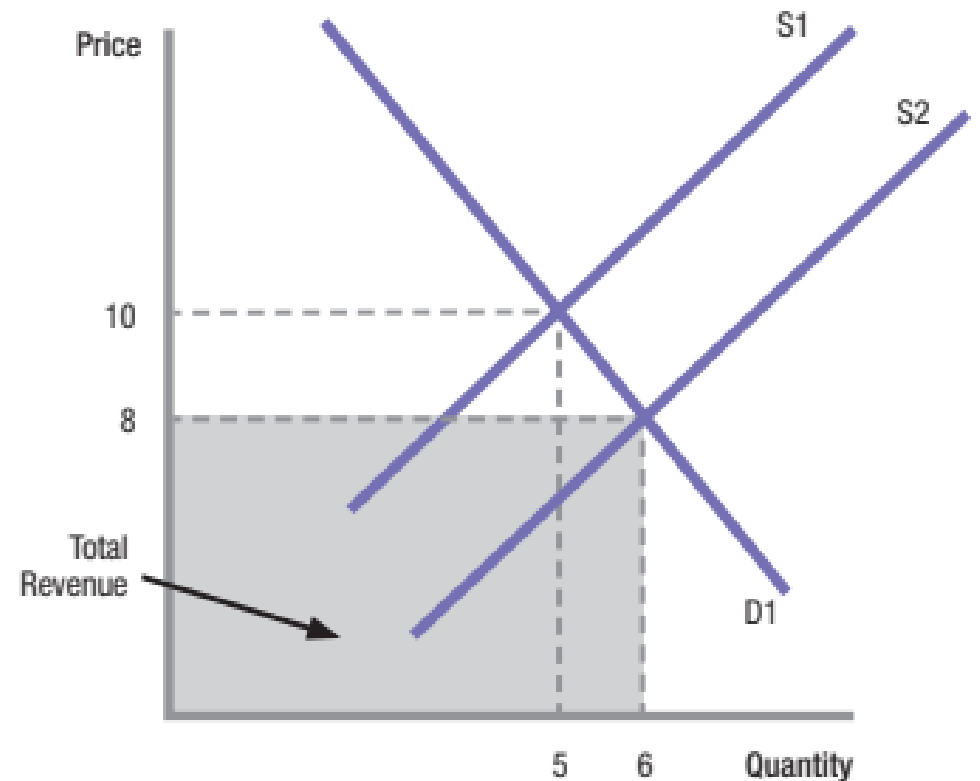
# Calculating revenue

- Revenue is the amount of money a producer earns from selling a good or service. It is calculated by multiplying the number of units sold by the price per unit.
- To calculate revenue from a supply demand curve we multiply the quantity (x axis) by the Price per unit (y axis)
- If you buy 5 DVDs priced at £10 each, the shopkeeper's revenue from the sale is £50. A firm's revenue can be identified as the shaded area on the diagram below where price is £10 and quantity demanded and supplied is equal to 5.



# Changing Equilibrium

- Shifts of the demand and/or supply curves will shift the market equilibrium price and quantity. Consequently, the revenue, as identified by the shaded area, will also change. A shift of the supply curve to the right will cause the price of CDs to fall to £8 each, and the quantity demanded and supplied to increase to 6 units. Total revenue decreases from £50 to £48 as shown in the diagram on the right.



# Independent Task – 10 Minutes

## ACTIVITY 4

Using the data in the table below, construct a demand curve and use the diagram to illustrate how total revenue changes if the equilibrium price falls from £0.40 to £0.30.

Price (£)	Demand (000s per year)
0.20	4
0.30	3
0.40	2
0.50	1

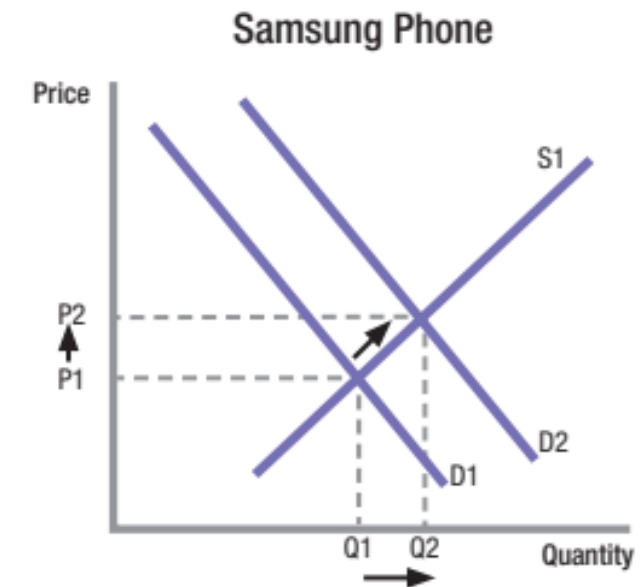
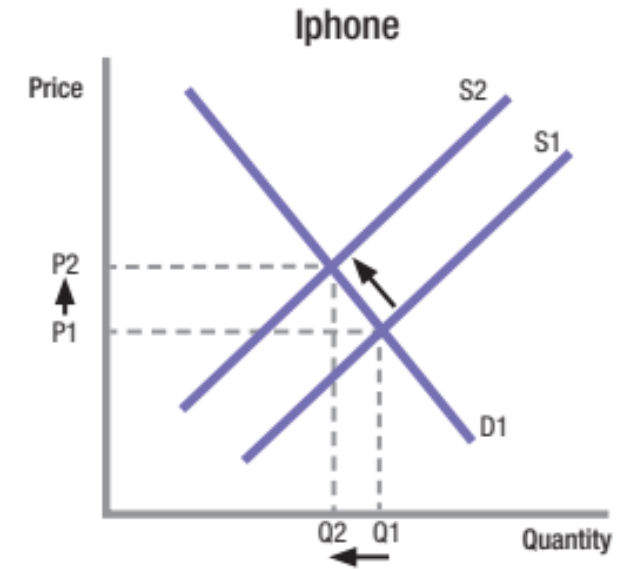


# Intermarket Relationships

- You will recall that a complementary good is a good which is demanded because it is used with another good and a substitute is a good which can be replaced by another good. When we considered changes in the conditions of demand, we used the following example; if the price of an iPhone increases, the demand for Samsung phones will increase. Demand and supply diagrams can be used to model the impact on the market for iPhone and Samsung phones.

# Intermarket Relationships

- An increase in the costs of production in the iPhone market cause the supply curve to shift to the left. As a consequence, the equilibrium price rises and the quantity demanded and supplied falls. The supply curve shifts to the left and there is a **contraction of demand**. However, as Samsung phones are substitutes for iPhones, there will be an increase in demand for Samsung phones. As a consequence, the equilibrium price of Samsung phones rises and quantity demanded and supplied increases. The demand curve shifts to the right and there is an **expansion of supply**



# Intermarket Relationships

- When we considered changes in the conditions of demand, we also used the following example; if the price of DVD players rises, the demand for DVDs will fall. Demand and supply diagrams can be used to model the impact on the market for DVD players and DVDs.



# Independent Task – 5 minutes

- Write an explanation to accompany the demand/supply diagrams for DVD's & DVD players, use the words, contraction/expansion of supply/demand.

# Elasticities

- So far, we have assumed that quantity demanded changes as price changes; however, we have not considered the extent to which quantity demanded changes in response to a change in price. For example, consider the demand for petrol; drivers do not significantly reduce their petrol consumption as the price of petrol increases. In this instance, quantity demanded is very insensitive to changes in price. On the other hand, during the summer months, small reductions in the price of foreign holidays lead to very significant increases in demand. In this instance, quantity demanded is very sensitive to changes in price. In economics, we describe this sensitivity as a good's price elasticity of demand.

# Price elasticity

- Price elasticity of demand (PED) is defined as the responsiveness of quantity demanded to a change in price.

# Factors that affect price elasticity of demand

- **Substitutability**; i.e. if the price of a good rises and it is possible to switch consumption to a cheaper substitute good, then demand will be sensitive to price changes. Conversely, if there are no substitute goods available, demand will be insensitive to price changes;

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- **Percentage of income;** i.e. if the purchase of a good accounts for a very small percentage of an individual's income and the price of the good increases, individuals are unlikely to change their purchasing decisions, consequently demand will be insensitive to price changes. The opposite is true if the purchase of a good already accounts for a significant proportion of income;



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- **Necessities or luxuries**; i.e. if a good is considered to be a necessity, individuals will continue to buy it in spite of price rises, in which case demand will be insensitive to price changes. On the other hand, individuals will be much more swayed by changes in the price of luxuries which will account for a greater proportion of an individual's income.

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- **Habit-forming/addictive goods**; i.e. some individuals are dependent upon goods such as alcohol and tobacco, and, as such will be indifferent to price changes. Demand will be insensitive to price changes.

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- **Habit-forming/addictive goods**; i.e. some individuals are dependent upon goods such as alcohol and tobacco, and, as such will be indifferent to price changes. Demand will be insensitive to price changes.
- **Time**; i.e. demand is more sensitive in the long-run as it takes time for individuals to adjust their spending patterns.

# Measuring Price Elasticity of Demand

- Price Elasticity of Demand is given by the following equation:

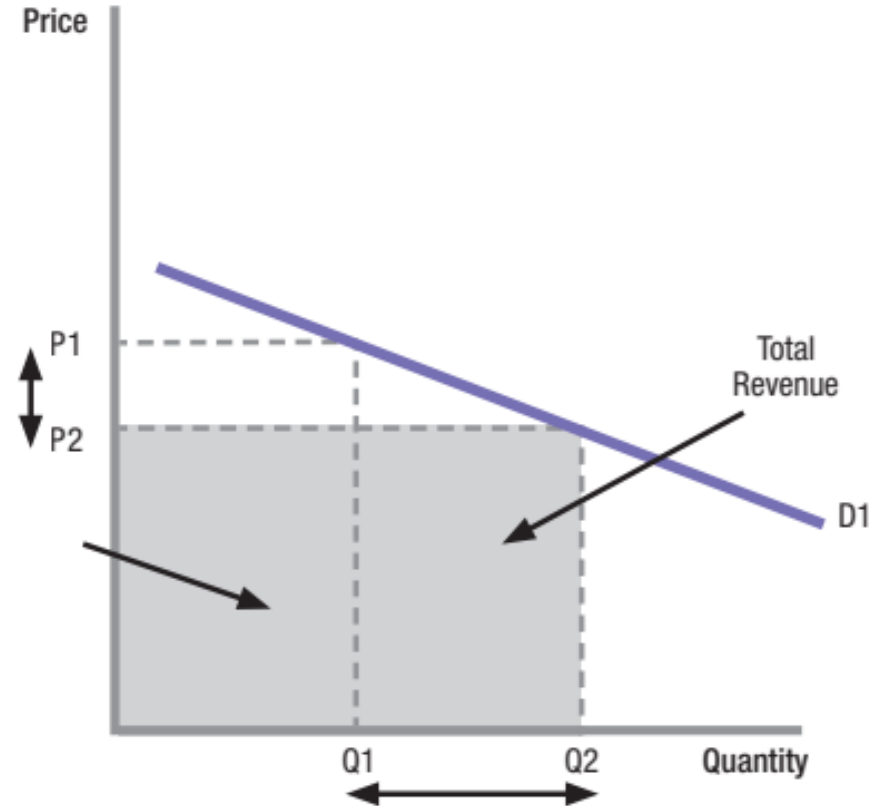
$$PED = \frac{\% \text{ Change in quantity demanded}}{\% \text{ Change in Price}}$$

# Measuring Price Elasticity of Demand

- If the outcome of a PED calculation is greater than 1, demand is said to be price elastic; i.e. demand is sensitive to price changes
- If the outcome of a PED calculation is less than 1, demand is said to be price inelastic; i.e. demand is insensitive to price changes

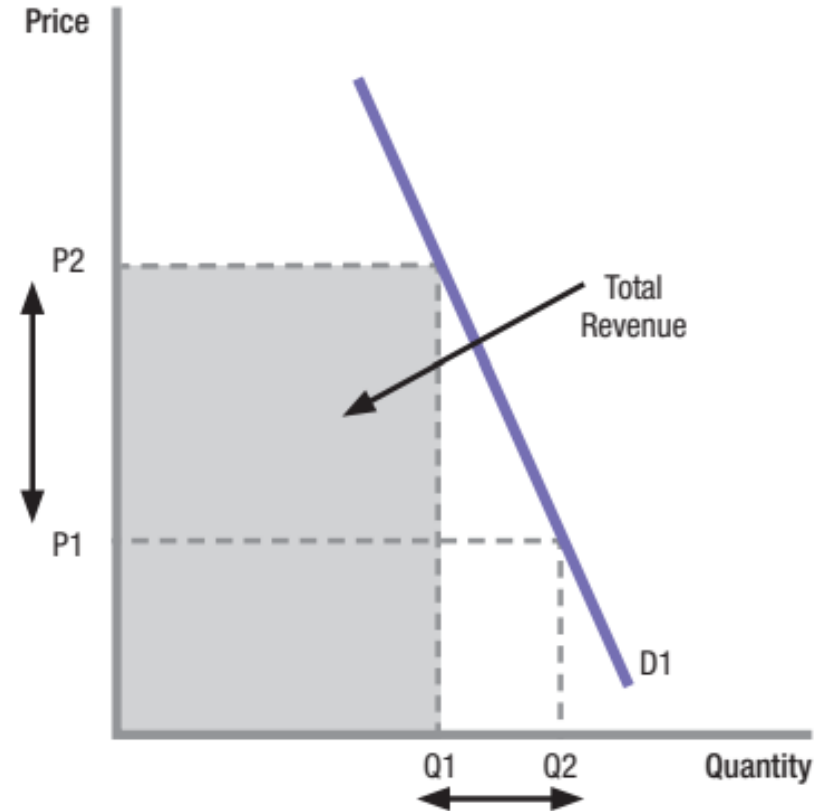
# Measuring Price Elasticity of Demand

- If PED is elastic, a small change in price results in a large change in quantity demanded. As a result, the demand curve will be relatively flat. This is illustrated in the diagram to the right where the change in quantity demanded is greater than the change in price.



# Measuring Price Elasticity of Demand

- If PED is inelastic, a large change in price results in a small change in quantity demanded. As a result, the demand curve will be relatively steep. This is illustrated in the diagram below where the change in quantity demanded is less than the change in price.



# Independent Task – 5 minutes

## ACTIVITY 5

Consider whether the price elasticity of demand for the following goods is elastic or inelastic.  
Give reasons for your answers.

	Price Elastic/Inelastic?	Reason?
Bread		
Coal		
Baked Beans		
Sky TV Subscription		



# Performing Calculations on Data

- If a firm reduces the price of its good by 10% and quantity demanded rises by 20%, using the PED formula calculate the price elasticity of demand.

# Independent task – 5 minutes

## ACTIVITY 6

Using the information below, calculate the price elasticity of demand if:

- Price falls by 20% and quantity demanded rises by 10%;
- Price falls by 5% and quantity demanded rises by 10%.

In both instances, explain whether price elasticity of demand is elastic or inelastic.

# Supply Elasticities

- There are also elasticities associated with supply.
- For example, consider the supply of goods on supermarket shelves; stocks on supermarket shelves can very quickly be replenished by bringing goods onto the shop floor from the stockroom. In this instance, as stocks can be refreshed almost instantaneously, quantity supplied responds very quickly to changes in price; i.e. quantity supplied is very sensitive to changes in price.
- On the other hand, at times of heightened demand, such as bank holidays and Christmas holidays, when even stockrooms and warehouses are emptied, large changes in price do not bring about significant changes in quantity supplied because the supplies are simply not there. In this instance, quantity supplied is very insensitive to changes in price. In economics, we describe this sensitivity as a good's price elasticity of supply

# Factors That Affect Supply Elasticity

- **The availability of stocks;** i.e. as considered in the introduction above, supply will be very sensitive to changes in price if significant stocks are available. If stocks are scarce, supply cannot respond quickly to changes in price and hence quantity supplied is very insensitive to changes in price;

# Factors That Affect Supply Elasticity

- **The availability of stocks;** i.e. as considered in the introduction above, supply will be very sensitive to changes in price if significant stocks are available. If stocks are scarce, supply cannot respond quickly to changes in price and hence quantity supplied is very insensitive to changes in price;
- **Spare production capacity;** i.e. if a firm is operating well below full capacity, it can very quickly respond to an increase in demand by increasing its supply. In this instance, as supply responds immediately, quantity supplied will be very sensitive to a change in price. On the other hand, if a firm is operating close to full capacity, it cannot immediately respond to an increase in demand by increasing its supply. In this instance, as supply adjusts very slowly, quantity supplied will be very insensitive to a change in price;

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- **The ease of switching between alternative methods of production;** i.e. if a firm can quickly and effectively switch between the use of capital and labour in production, it can very quickly respond to an increase in demand by increasing its supply. In this instance, as supply responds immediately, quantity supplied will be very sensitive to a change in price. On the other hand, if a firm has no choice but to use a specific factor of production, and all factors of production are employed, it cannot immediately respond to an increase in demand by employing a substitute factor of production. In this instance, as supply adjusts very slowly, quantity supplied will be very insensitive to a change in price;

# Factors That Affect Supply Elasticity

- **The availability of stocks;** i.e. as considered in the introduction above, supply will be very sensitive to changes in price if significant stocks are available. If stocks are scarce, supply cannot respond quickly to changes in price and hence quantity supplied is very insensitive to changes in price;
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- **Time;** i.e. it takes time for firms to respond to changes in demand. The speed with which a firm can meet changes in demand with changes in supply depends upon the industry in which the firm is operating. In agricultural crop markets, it is not possible to miraculously produce crops out of nowhere as a certain lead time is required for planting and harvesting. In this instance, as supply adjusts very slowly, quantity supplied will be very insensitive to a change in price. On the other hand, if farmers are made aware that next year's demand for crops will be much higher, farmers can plan ahead and meet the additional demand with additional supply. In this instance, as supply responds immediately, quantity supplied will be very sensitive to a change in price.

# Measuring Price Elasticity of Supply

- Price elasticity of supply is given by the following equation:

$$PES = \frac{\% \text{ Change in quantity supplied}}{\% \text{ Change in Price}}$$

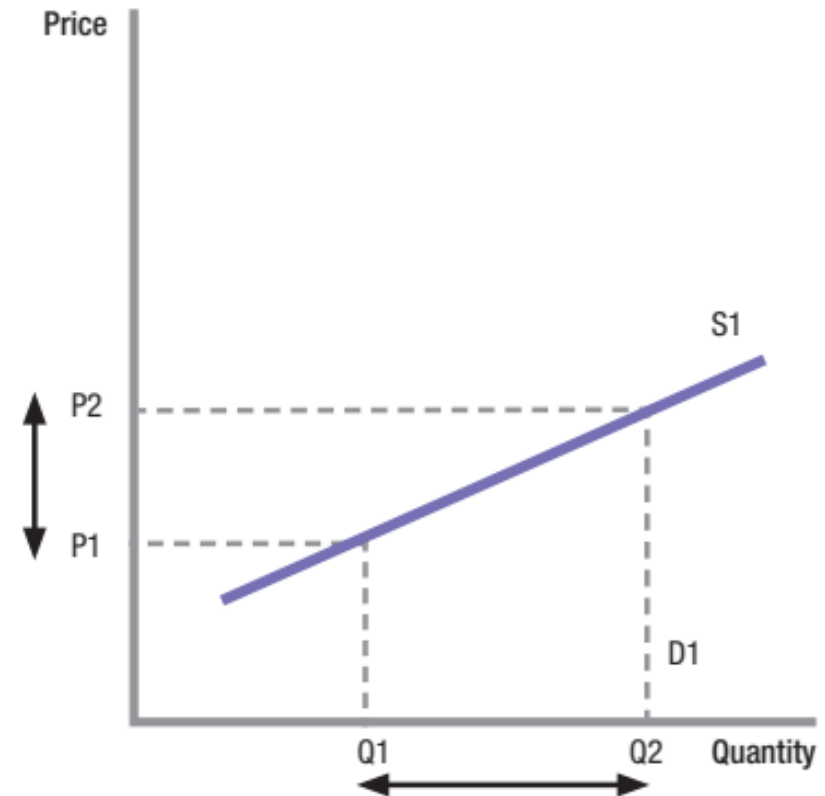


# Measuring Price Elasticity of Supply

- If PES is greater than 1 supply is said to be price elastic; i.e. supply is sensitive to price changes.
- If PES is less than 1, supply is said to be price inelastic; i.e. supply is insensitive to price changes.

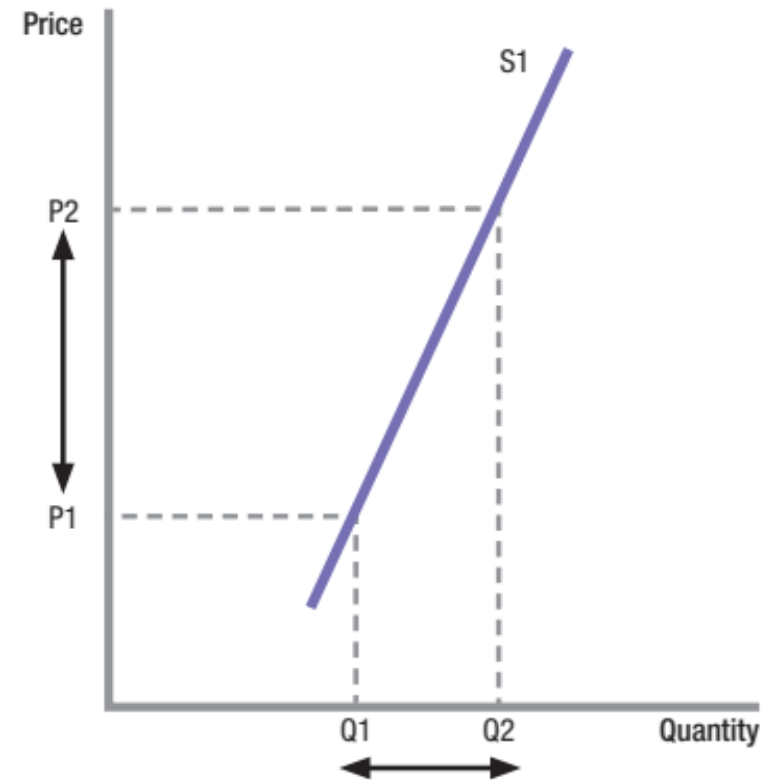
# Measuring Price Elasticity of Supply

- If PES is elastic, a small change in price results in a large change in quantity supplied. As a result, the supply curve will be relatively flat. This is illustrated in the diagram on the right where the change in quantity supplied is greater than the change in price.



# Measuring Price Elasticity of Supply

- If PES is inelastic, a large change in price results in a small change in quantity supplied. As a result, the supply curve will be relatively steep. This is illustrated in the diagram on the right where the change in quantity supplied is less than the change in price.



# Performing Calculations on Given Data

- If a firm increases the price of its good by 10% and quantity supplied rises by 20%, using the PES formula calculate Price Elasticity of Supply

# Independent Task – 5 Minutes

## ACTIVITY 7

Using the information below, calculate the price elasticity of supply if:

- Price rises by 10% and quantity supplied rises by 20%;
- Price rises by 10% and quantity supplied rises by 5%.

In both instances, explain whether price elasticity of supply is elastic or inelastic.