

Taxes and Subsidies

In the next two lessons we will be looking the following areas.

- ✚ Indirect taxes
- ✚ Subsidies

1. Draw a demand and supply curve for the market for cigarettes.

a) Illustrate what happens when the government imposes a **tax** on the producer. What would be the **impact** on the market ? (Think about the producer's costs)



b) Complete the diagram showing what happens in full when a tax is imposed.

c) Write down the **areas** that represent the following.

✚ Tax paid by the **producer**.

✚ Tax **paid** by the **consumer**.

✚ Total Tax **received** by the **government**.

✚ **Producer revenue** before and after the tax.

d) Give **examples** of the kind of products upon which the government would place a tax.

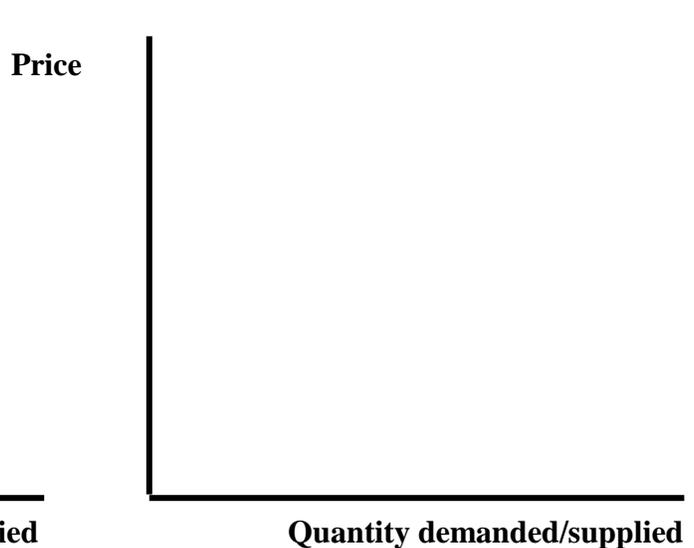
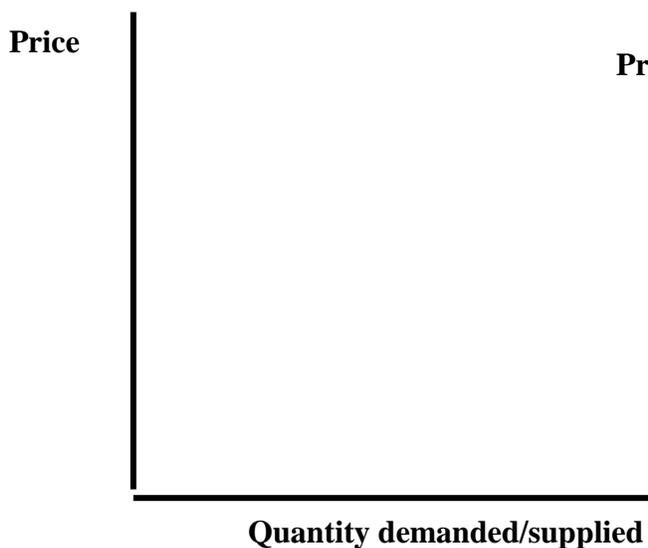
⇒
⇒
⇒

e) **Why** do the government **impose indirect taxes** on the production of certain products?

f) There are two types of tax that the government can impose upon a firm. These are :-

✚ _____
✚ _____

g) On the two diagrams below indicate the difference between a specific (flat rate) tax and an Ad-Valorem Tax.

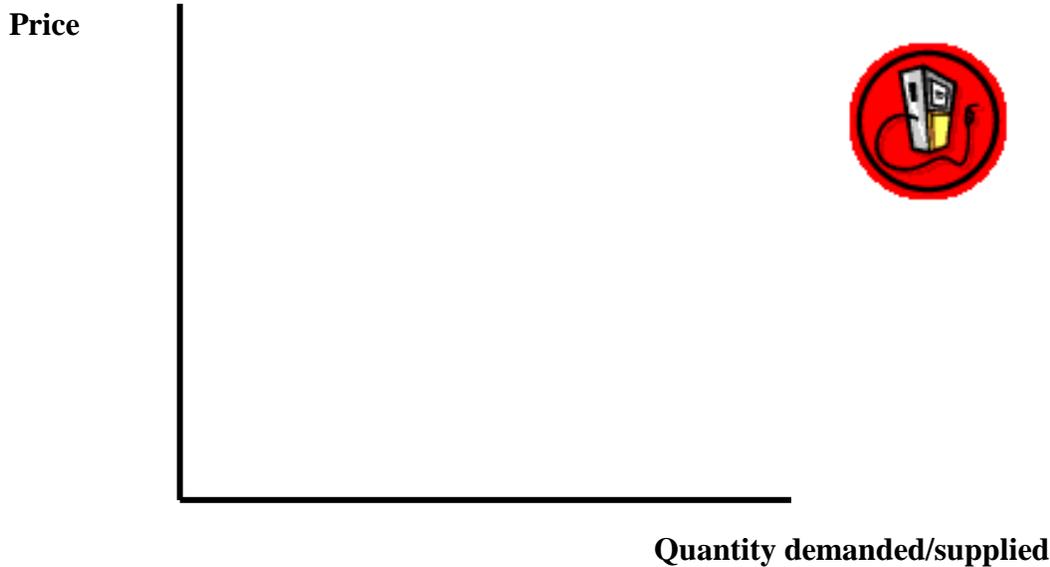


h) Give an example of an **Ad-Valorem tax** that any government imposes upon a product.

i) Give an example of a **specific (flat rate) tax** that a government imposes on a product.

j) The type of product and its price elasticity of demand can have an effect upon how much of an indirect tax is paid by the **consumer** and how much is paid by the **producer**.

- Consider what happens when the government raises tax on petrol. Illustrate the impact of this on the diagram below.



k) Looking at the diagram, who pays the majority of the tax to the government?

l) Why are producers able to pass on most of the tax increase to consumers?

m) Conversely illustrate the impact of an increase in the indirect tax on the market for perfume.

Price



Quantity demanded/supplied

n) **Who** pays the majority of the tax to the government in this example?

o) **Why** is this the case here?

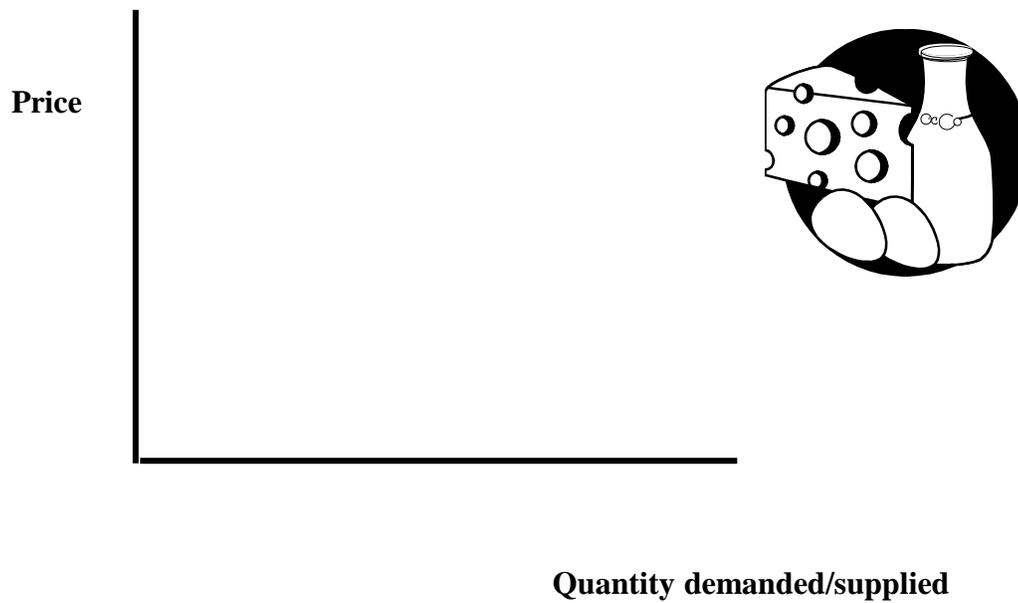
Subsidies

✚ What is meant by the term **subsidy**?

✚ How do subsidies effect the following stakeholders?

Stakholder	Impact
Producers	
Consumers	
Government	

✚ On the diagram below illustrate the impact that a subsidy would have on the market for wheat.



p) Identify from the diagram above the following.

✚ **Amount** of the subsidy.

✚ **Total revenue** received by the producer.

✚ The old and the new **price** paid by the consumer.

q) **Which** products/industries might receive a subsidy from the government ?

- ⇒
- ⇒
- ⇒
- ⇒

r) Why do the government grant/give subsidies to certain companies?

Calculating the Incidence of a tax and a subsidy

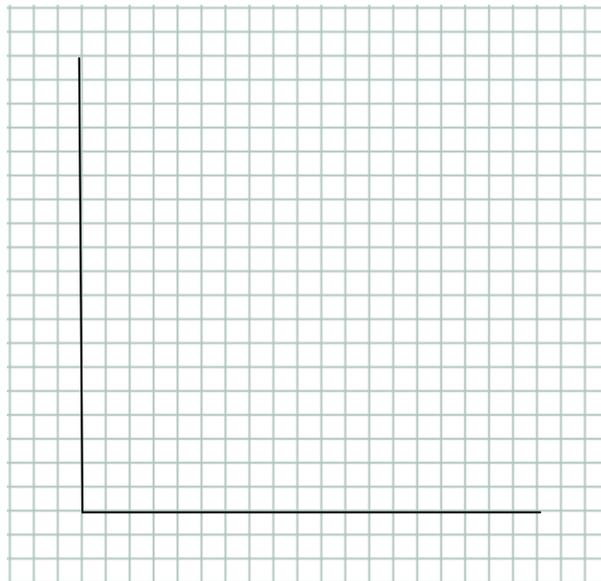
- Let's take the demand and supply functions used in the previous example

$$Q_d = 50 - 5P$$

$$Q_s = -25 + 10P$$

- Plot the demand and supply diagram on the axis below.

Price	0	2	5	8	10
$Q_d = 50 - 5P$					
$Q_s = -25 + 10P$					

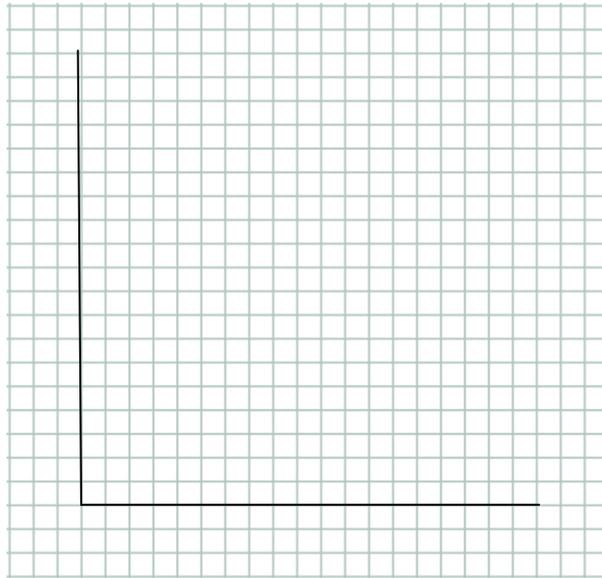


- 1) – Now we are going to introduce a per unit tax of **\$1.5 per unit**. The new equation for the supply curve is given as follows:-

$$Q_s = -40 + 10P$$

Price	0	2	5	8	10
$Q_d = 50 - 5P$					
$Q_s = -40 + 10P$					

- Plot the new demand and supply diagram now that the per-unit tax has been imposed.



2) – Calculate the following amounts.

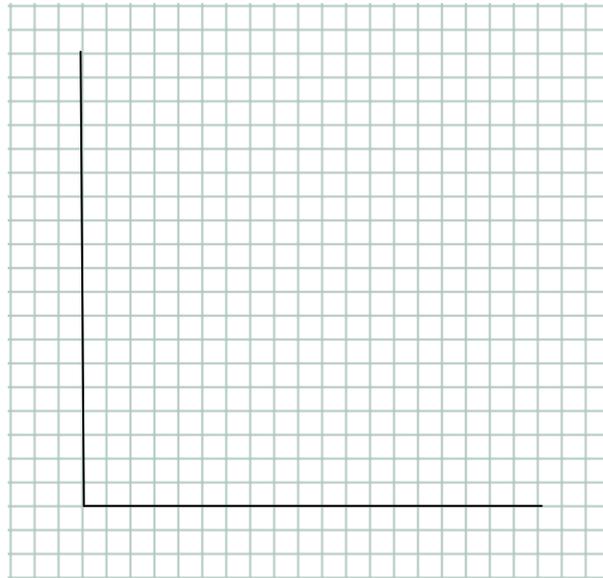
• Amount of tax paid by the consumer	
• Amount of tax paid by the producer	
• Total amount of tax received by the government	
• Revenue of the firm before the tax.	
• Revenue of the firm after the tax	
• New selling price	

3) Now we are going to introduce a subsidy of **\$1.5 per unit**. The new equation for the supply curve is given as follows:-

$$Q_s = -10 + 10P$$

Price	0	2	5	8	10
$Q_d = 50 - 5P$					
$Q_s = -10 + 10P$					

- Plot the new demand and supply diagram now that the subsidy has been introduced.



4) – Calculate the following amounts.

• The subsidy paid by the government	
• The total revenue received by the firm	
• The new selling price	

5) – Take the following equations:-

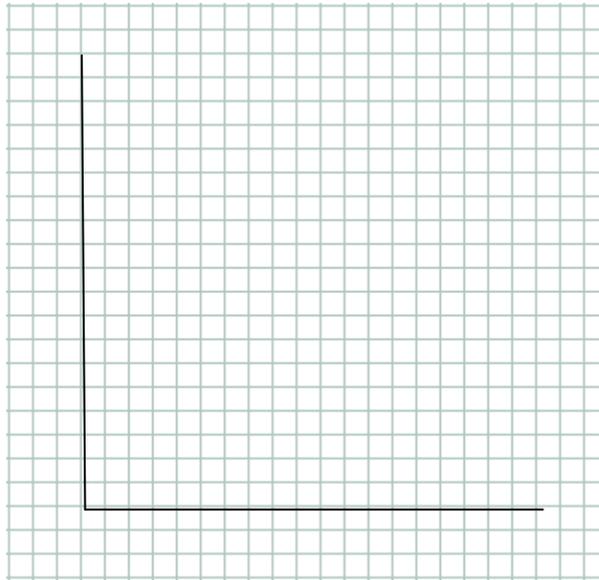
$$Q_d = 60 - 5P$$

$$Q_s = -30 + 10P$$

- a) - Plot the demand and supply curves.

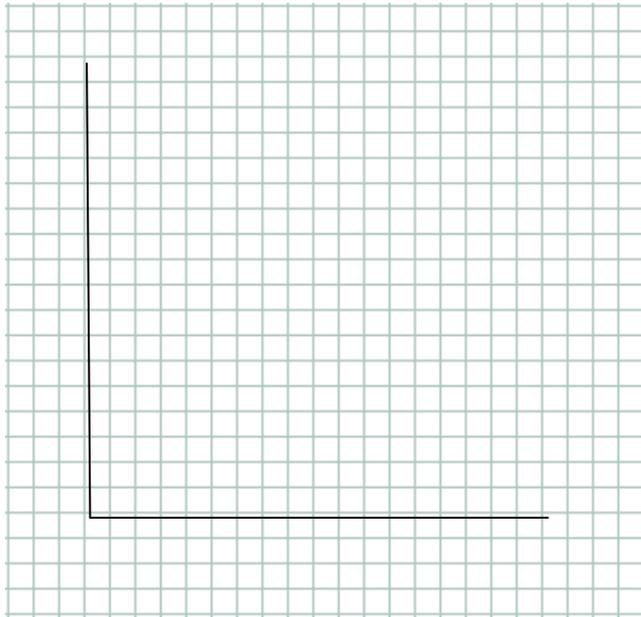
- b) - Introduce a per unit tax of \$3 per unit.
- c) - Plot the new supply curve on the same diagram.

Price	0	2	5	8	10
$Q_d = 60 - 5P$					
$Q_s = \underline{\hspace{1cm}} + 10P$					



- a) - Plot the demand and supply curves.
- b) - Introduce a subsidy of \$3 per unit.
- c) - Plot the new supply curve on the same diagram.

Price	0	2	5	8	10
$Q_d = 60 - 5P$					
$Q_s = \underline{\hspace{1cm}} + 10P$					



Maximum and Minimum Prices

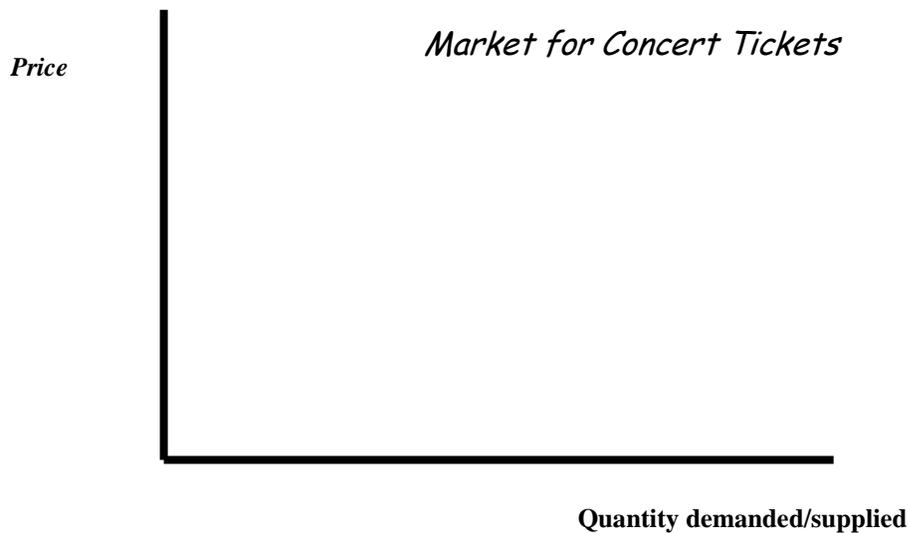
In this lesson we will be looking at what happens when there is intervention in the market and a price is set that is not the market equilibrium price.

1. We often hear on the radio that concert promoters are concerned that tickets are being sold on the '*black market*'. We can use demand and supply analysis to show why this is happening and what can be done about it.



✚ The promoters of the concert decide that tickets prices will be **50 CHF**.

✚ On the diagram below draw a **demand and supply diagram** to illustrate this situation.



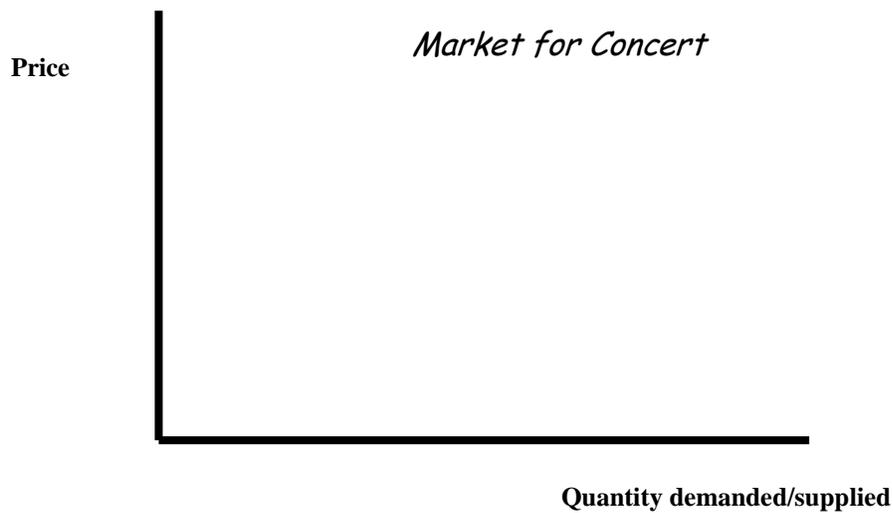
2. What situation has occurred in the above market?

3. Why is **50 CHF not** a suitable price to charge in this case?

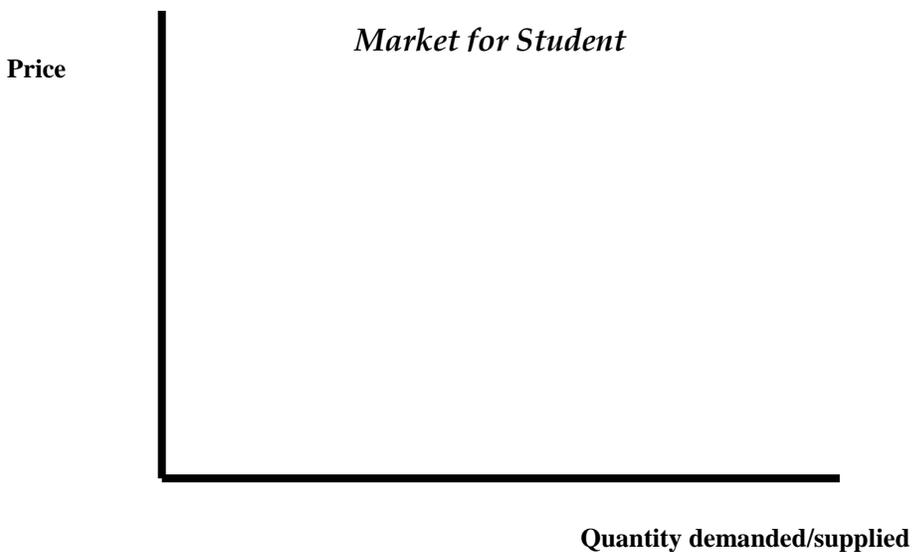


4. What is the other consequence of charging this price for the tickets?

5. On the diagram below illustrate how the market equilibrium could be **restored**.



6. We are now going to look at a similar example but this time it relates to the supply of student accommodation in Milan.



✚ Milan is an increasingly **popular destination** for students all across Europe. The local government of Milan are concerned that increasing demand for accommodation is pushing up the prices of flats for students.

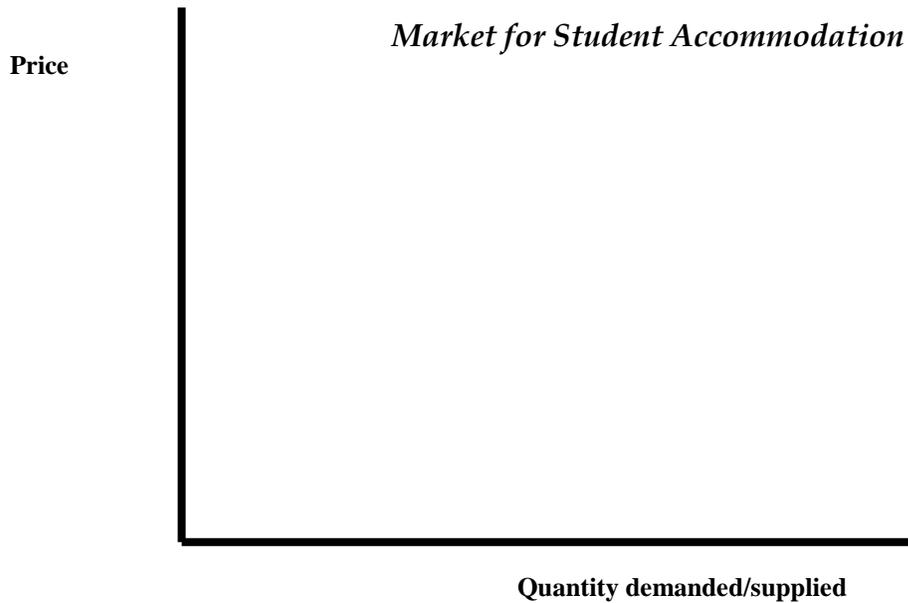
✚ The council has therefore decided that the maximum rent that can be charged by a landlord is **70 Euros a week**. On the diagram illustrate what would happen in the market if this were to be imposed.

7. What would happen to the **quantity of students accommodation supplied** by landlords?

8. What would be the resulting situation in the market?

9. How should this situation be solved by the **local government**?

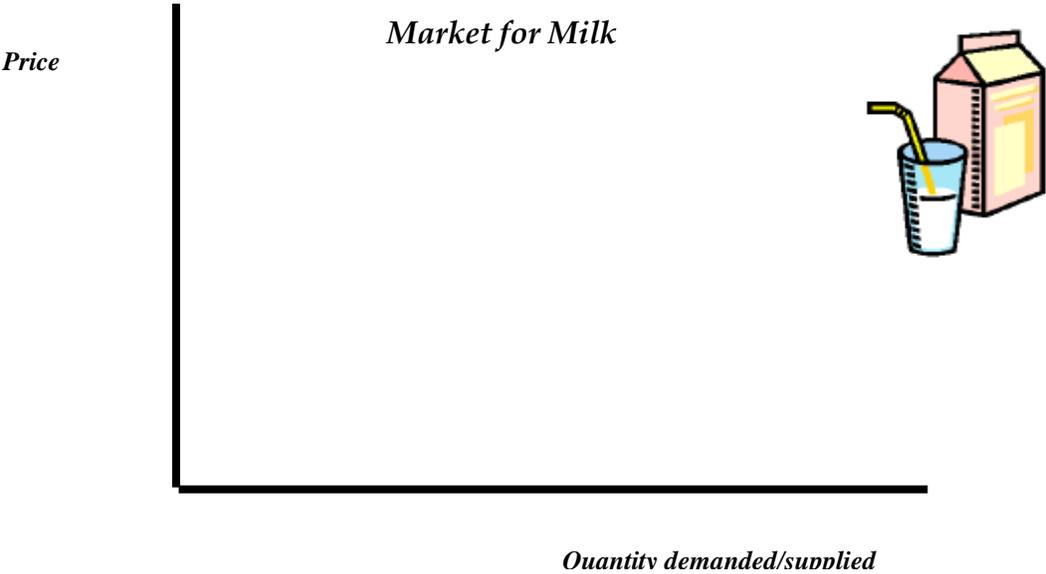
✚ _____
✚ _____



Minimum Prices

10. The European Union used to operate a system of **minimum prices** for farmers in Europe as part of the Common Agricultural Policy.

- ✚ For an agricultural product such as milk farmers were guaranteed a set price regardless of the equilibrium price in the market.
- ✚ Illustrate this on the diagram below

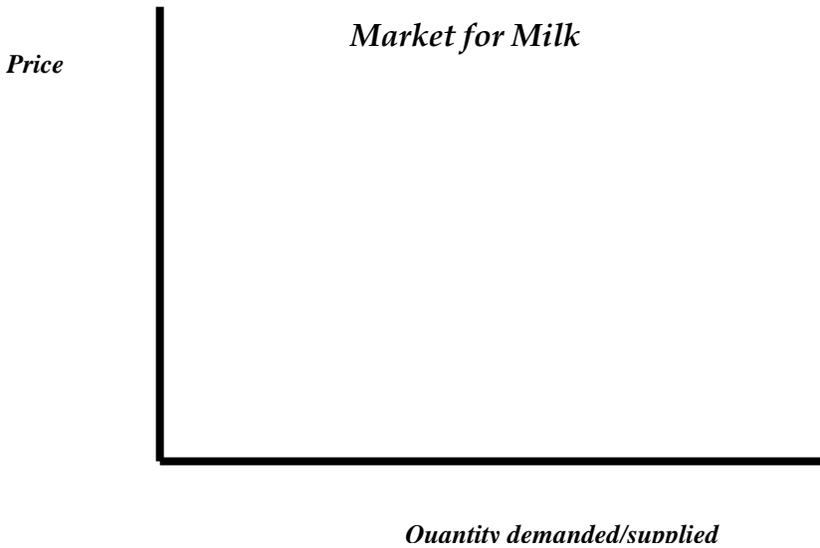


11. Because of this intervention in the market what is the result?

12. Why do you think the European Union has introduced this scheme? Summarise the advantages and disadvantages in the table below.

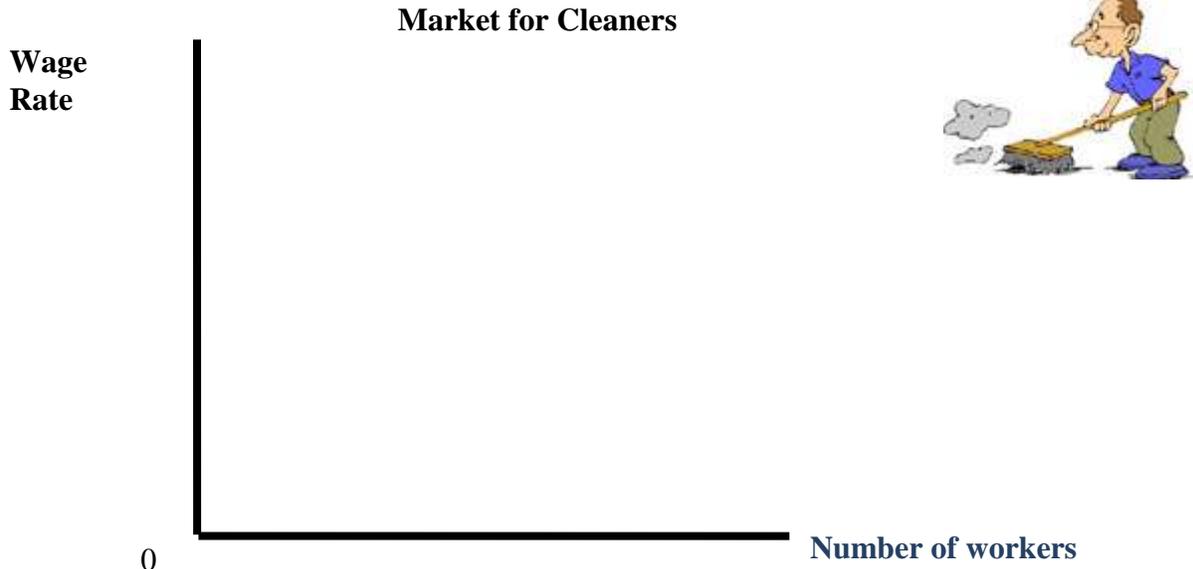
Advantages	Disadvantages
<input type="checkbox"/>	<input type="checkbox"/>

13. How might the European Union rectify this example of **market failure**?



The Minimum Wage

- + A minimum wage gives **protection to those workers** whose weak position in the labour market makes them vulnerable to being paid low wages.

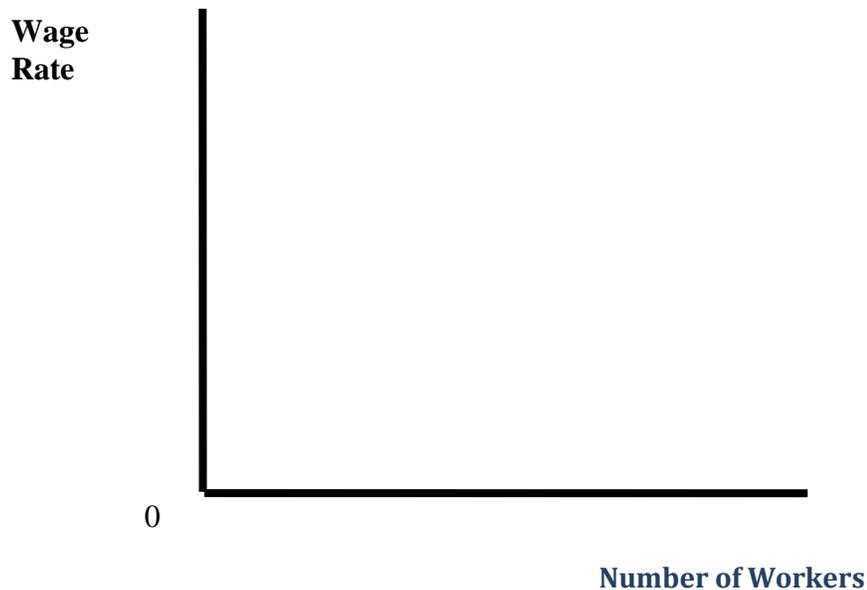


✚ Illustrate the impact of the minimum wage on the above diagram.

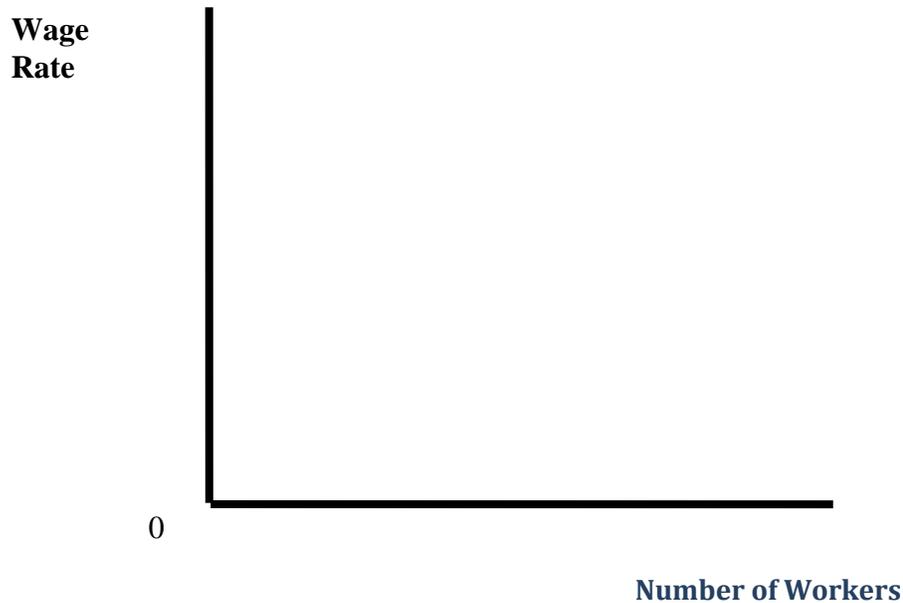
1. What is the **impact** on the labour market of the **Minimum Wage**? Complete the table below.

<i>Group</i>	<i>Impact</i>
Workers	
Employers	
Government	

2. What would happen if the minimum wage was set below the market wage?



3. How might the minimum wage lead to an increase in employment in a competitive labour market?



4. **Why** might this be the case?

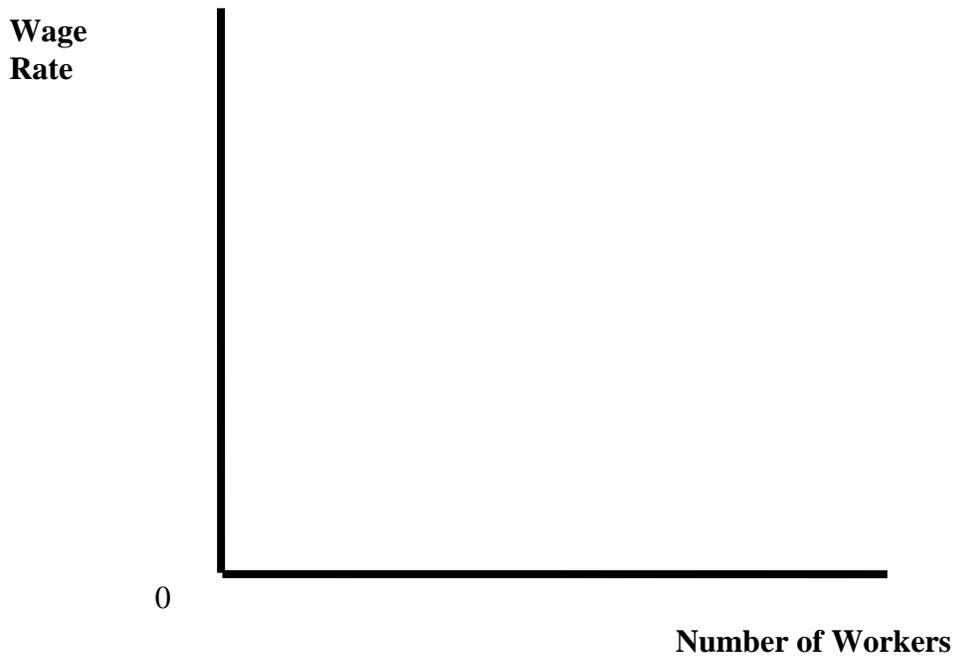
✚ Examine the reasons for the above

✚ An increase in wages could lead to an **increase in productivity** because of :

5. The **efficiency wage effect**.



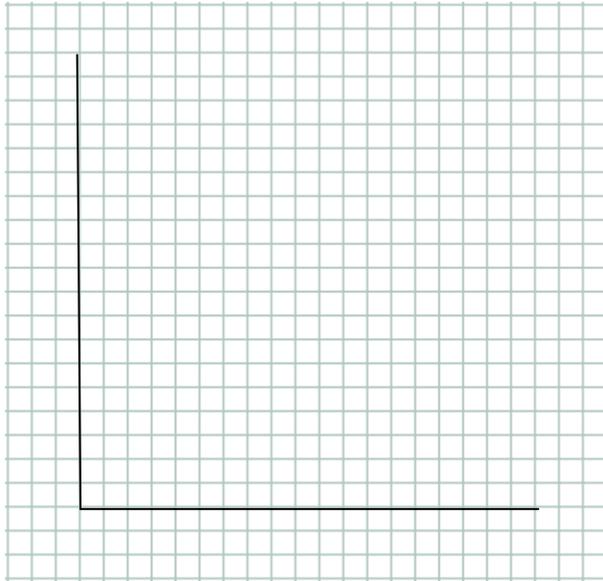
6. Use the concept of elasticity to explain and illustrate how the impact of a minimum wage may vary depending upon the labour market.



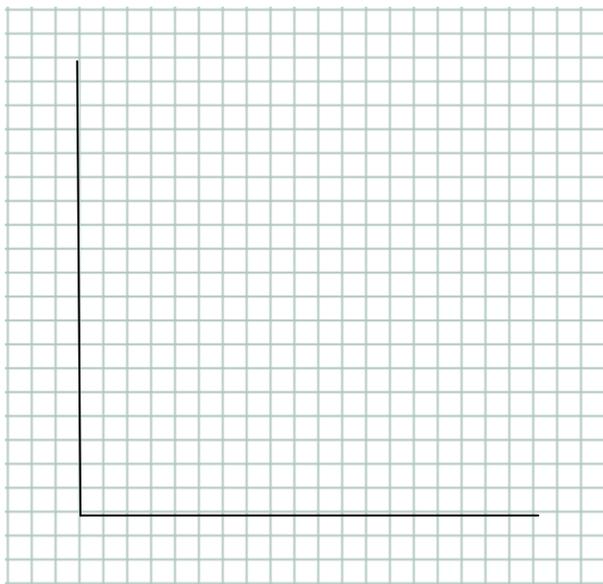
Calculating the effects of a price ceiling and a price floor.

- Let's take the demand and supply functions used in the previous example
- $Q_d = 50 - 5P$**
- $Q_s = -25 + 10P$**
- Plot the demand and supply diagram for the market for bread on the axis below.

Price	0	2	5	8	10
$Q_d = 50 - 5P$					
$Q_s = -25 + 10P$					



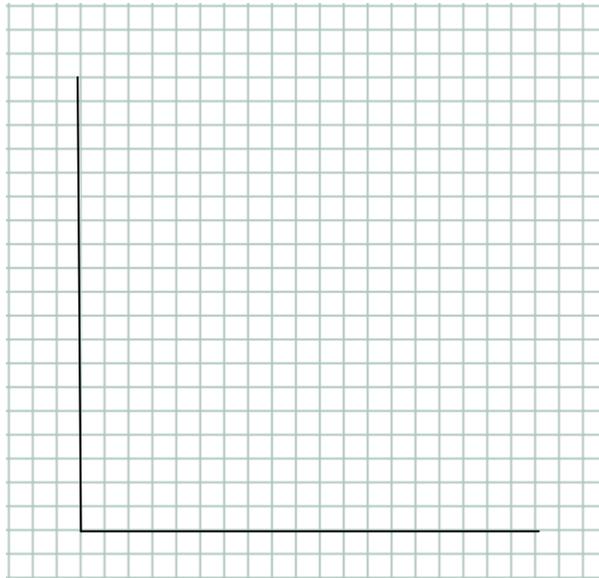
- 6) – Now the government are going to introduce a price ceiling (maximum prices) of **\$4**. Please plot this on the diagram below.



7) - Calculate the following

- The level of excess demand. _____
- The change in consumer surplus. _____
- The change in producer revenue _____

8) – Now let's imagine that a price floor (minimum price) of \$6 is introduced by the government to try and protect farmers from fluctuations in the market price. Please plot this on the diagram below.



9) – Please calculate the following:-

- The excess level of supply. _____
- The amount of money that would be needed to purchase the surplus. _____