

Subsidies

GCE A-LEVEL & IB ECONOMICS

Lesson Structure

- Subsidies
 - Definition
 - Diagram
 - Effects on Stakeholders
 - Evaluation

What are Subsidies?

Subsidies are funds provided by the government to produce or consume a good or service.

How would you think subsidies will affect the price/quantity of a good in the market?



Examples of Subsidies

Would anyone like to give me an example of a good or service subsidized by the government?

Examples of Subsidies

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Post Brexit Farming Subsidies



Renewable Energy Subsidies

Effects of Subsidies

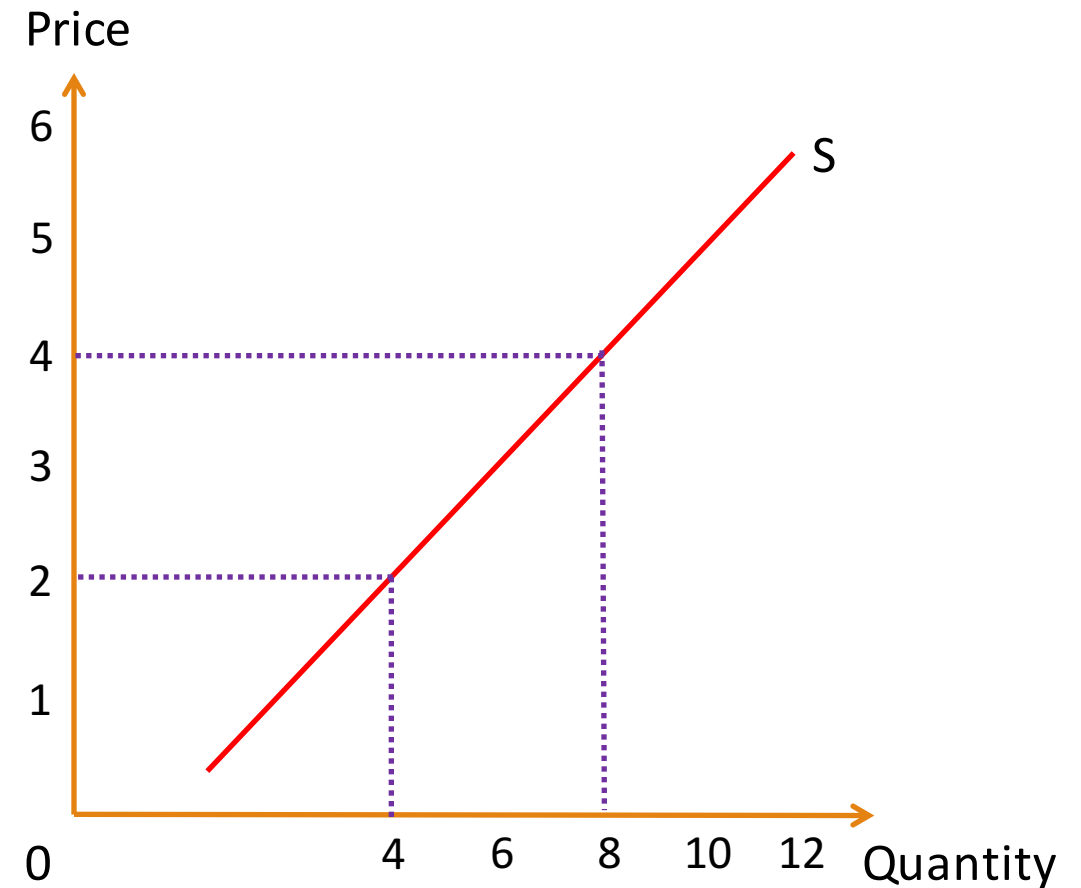
Subsidies **reduce the cost to produce** for suppliers. This will cause producers to increase their output as they can earn higher profits per unit. Hence, the **supply** curve will **shift to the right**.

Note that subsidies have the the opposite effect of taxes on goods and services.

To understand how a subsidy affects the market, we can try to plot the supply curve after a subsidy is incurred.

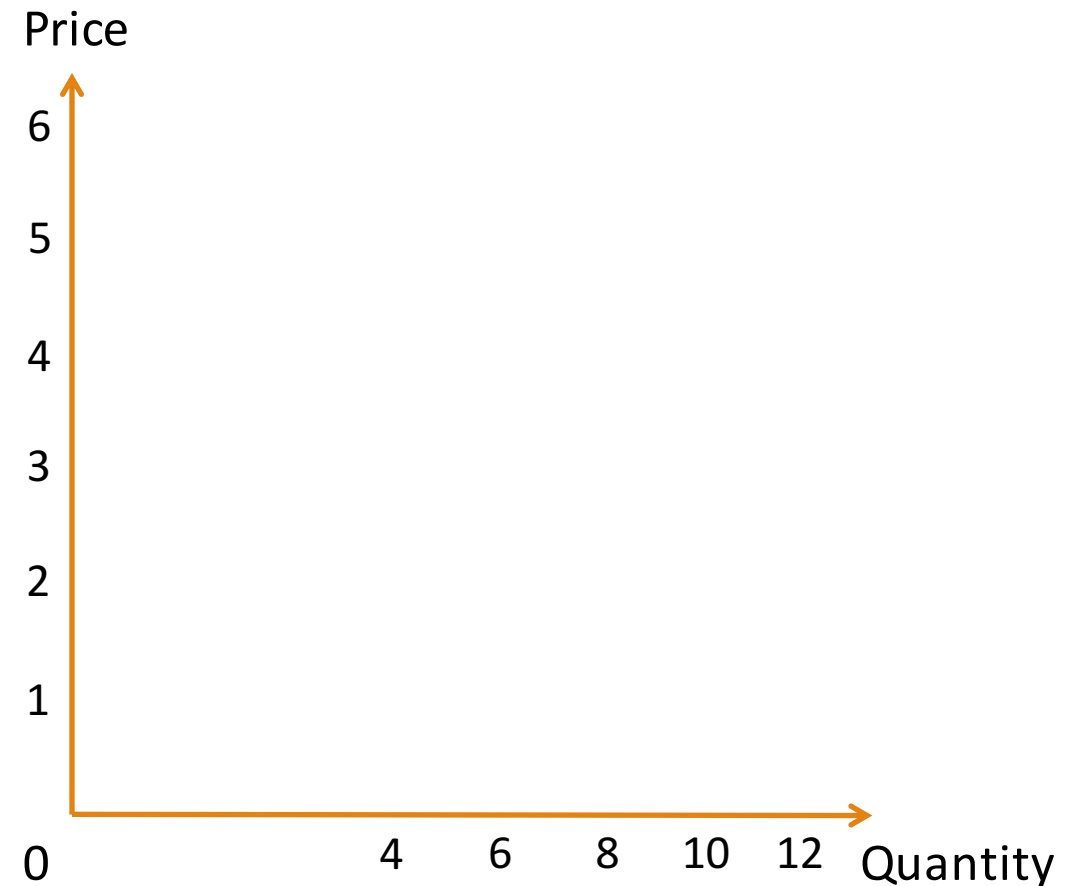
The Supply Curve

Price	Quantity Supplied
£2	4
£3	6
£4	8
£5	10
£6	12



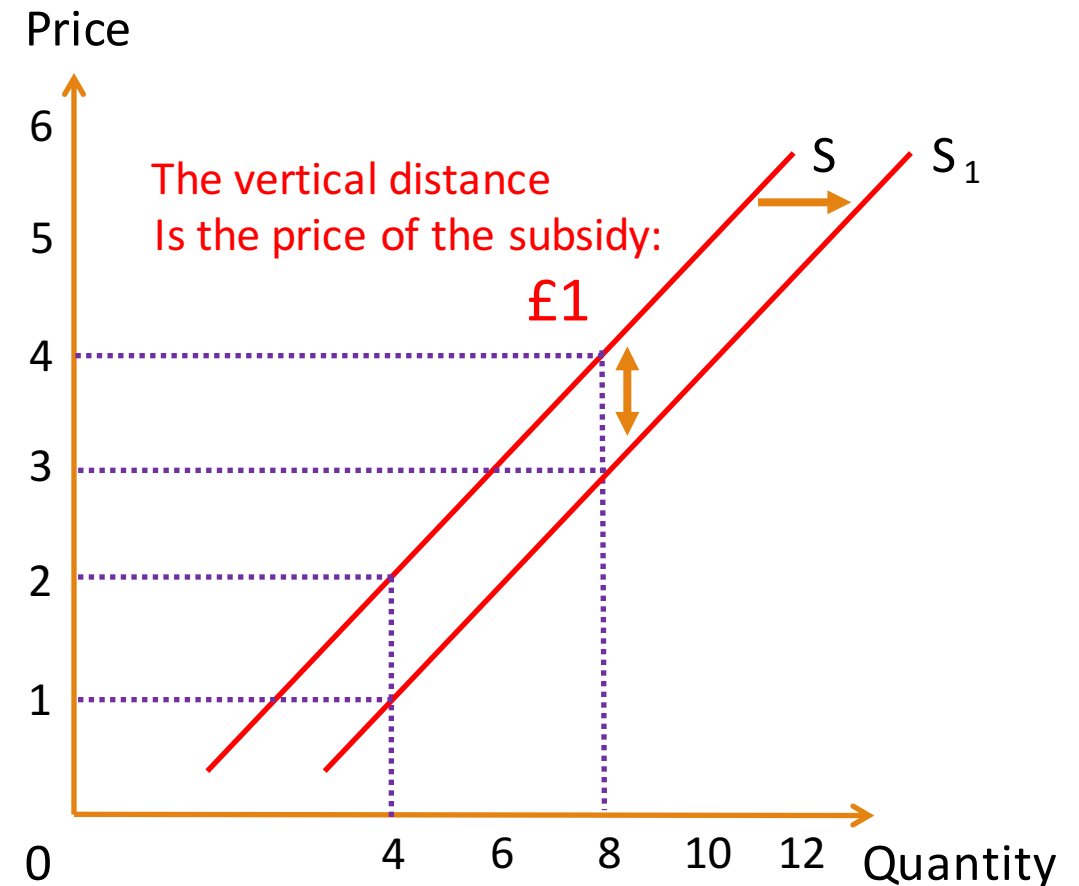
Plot the Supply Curve with Subsidy

Price	Quantity Supplied	Price after £1 Subsidy
£2	4	£1
£3	6	£2
£4	8	
£5	10	
£6	12	



Supply Curve with Subsidy

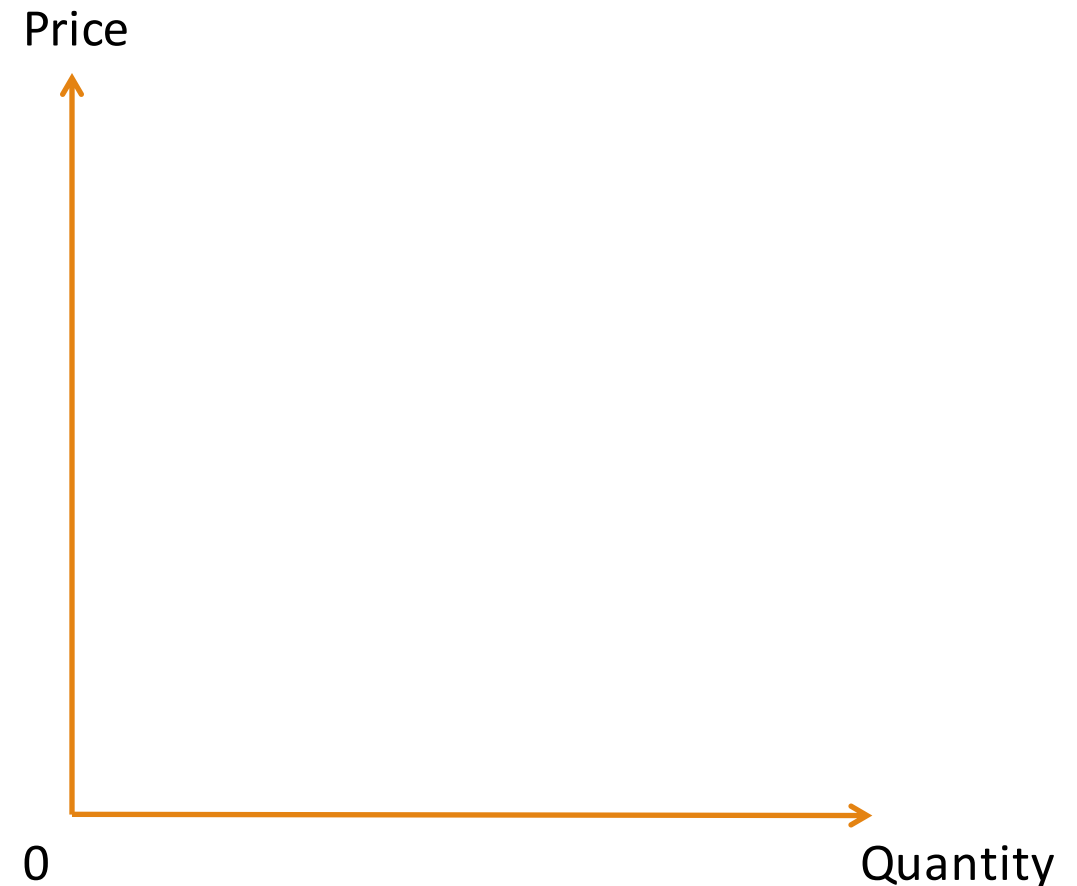
Price	Quantity Supplied	Price after £1 Subsidy
£2	4	£1
£3	6	£2
£4	8	£3
£5	10	£4
£6	12	£5



Subsidies in the Market

What will happen to the market price and quantity given an increase in supply?

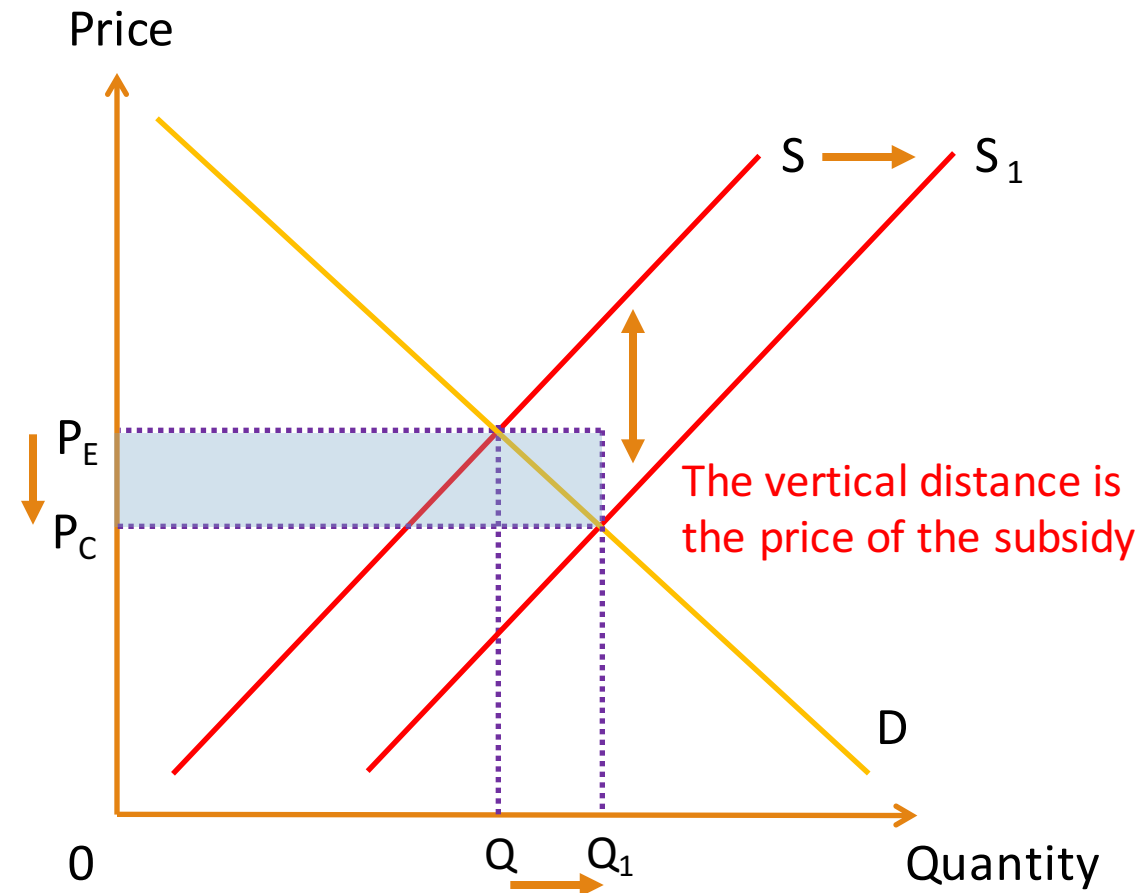
Illustrate it using a demand and supply diagram in the graph on the right.



Subsidies in the Market

When supply shifts to the right in a market, the market price for consumers to purchase decreases from P_E to P_C . The lower price is made possible as the consumers are receiving $P_E - P_C$ of the subsidy for Q units of the product in the market. Hence, the blue area is the subsidy taken up by the consumer.

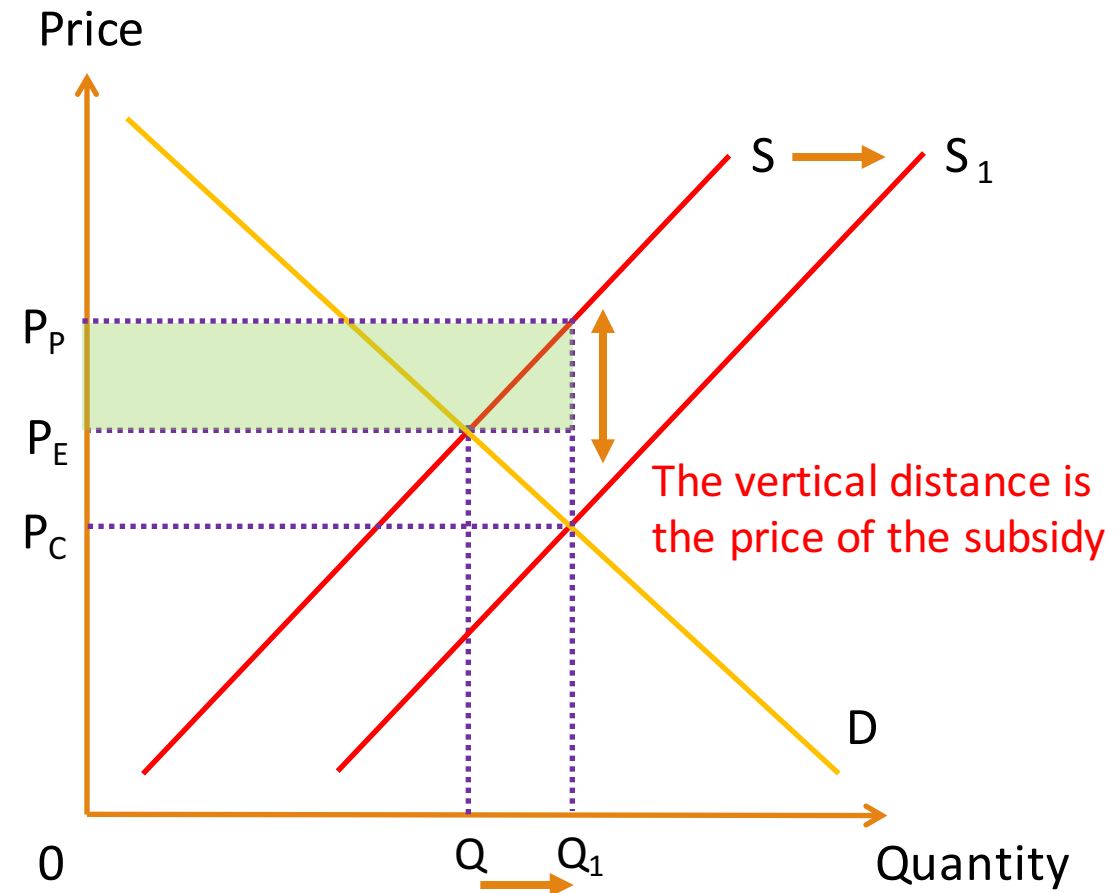
However, as we recall, the vertical distance is the entire amount of the whole subsidy. Therefore this diagram is incomplete.



Subsidies in the Market

Extending the vertical from the new market equilibrium, this will give us the entire subsidy and help us find the subsidy received by producers.

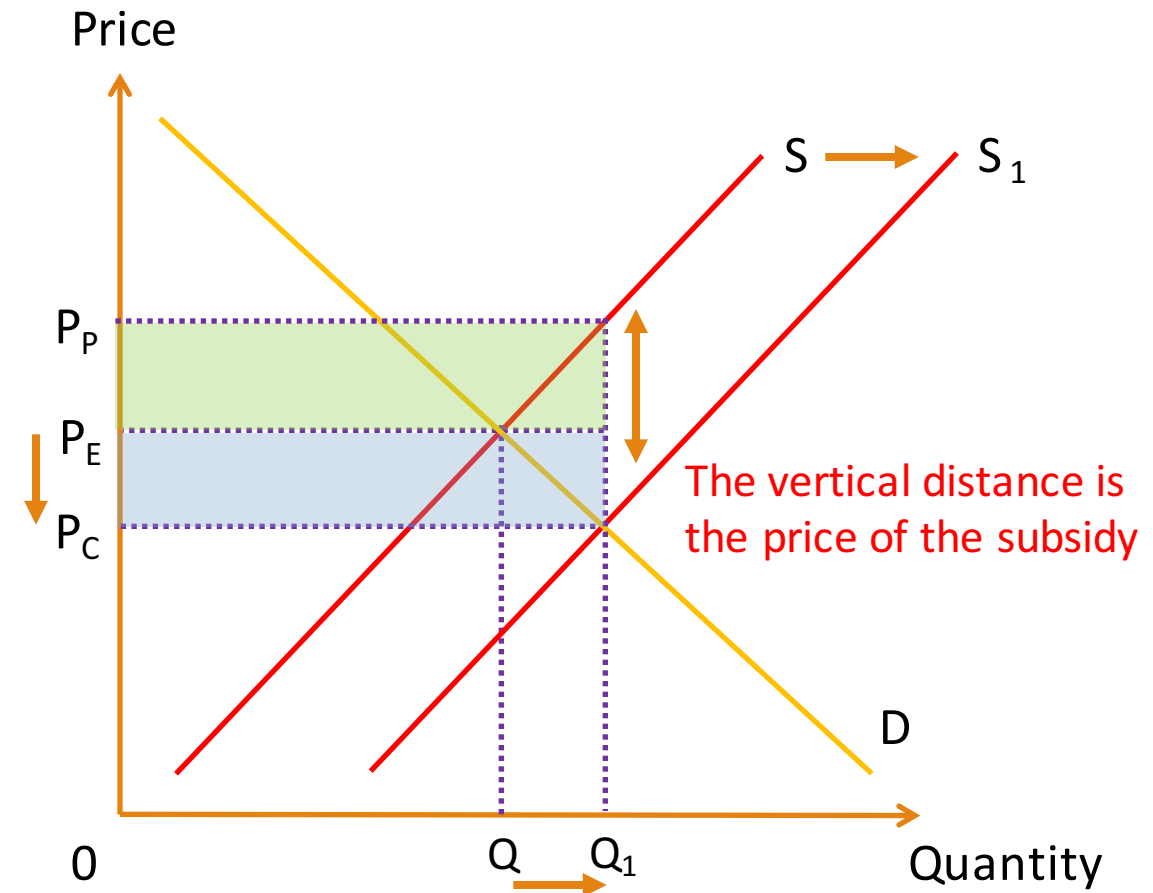
As the government is paying a subsidy of $P_P P_C$ for each unit, P_P is the price the producer receives for each unit sold, rather than the original price P_E . Hence, the green area is the subsidy received by the producer for Q units sold.



Subsidies in the Market

To conclude, the government is paying a subsidy of the rectangular green and blue area. The green area is the subsidy received by the producer, and the blue area is the subsidy received by the consumer.

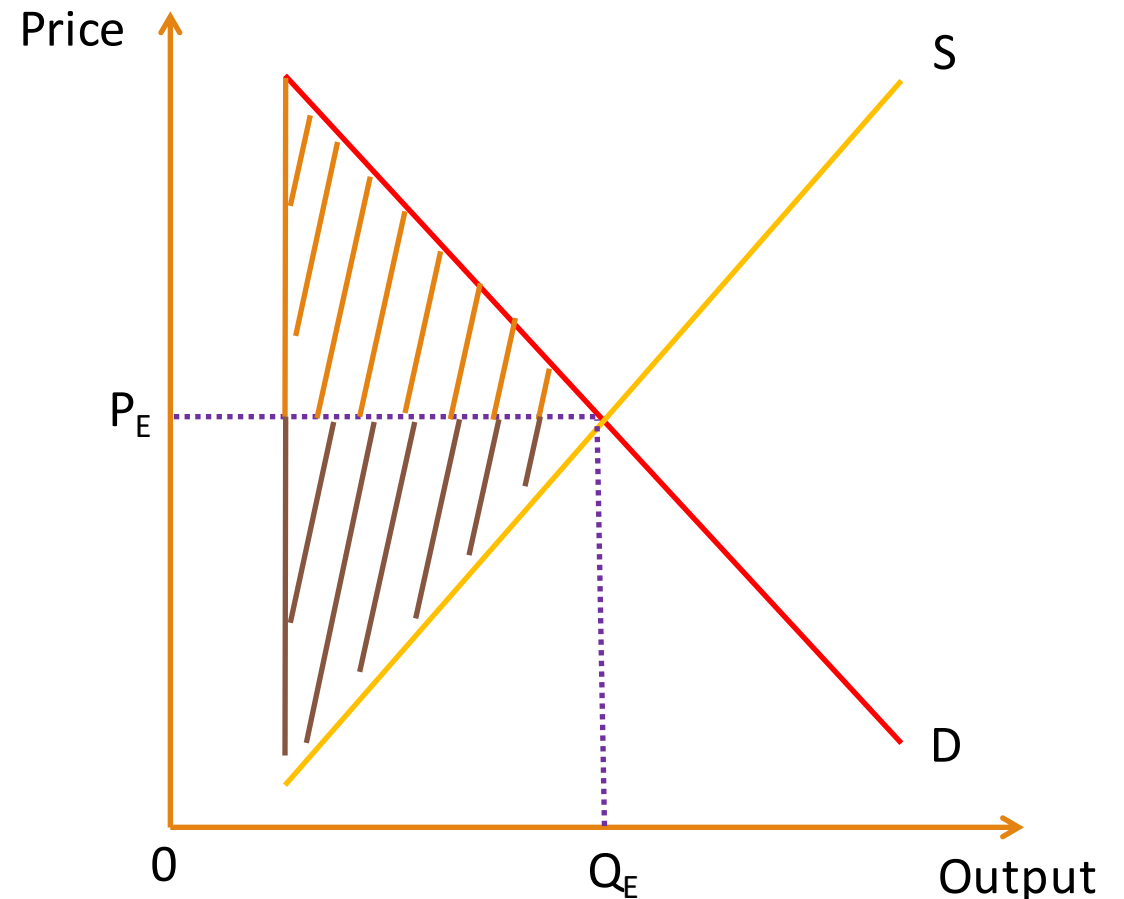
Hence, we can see the subsidy is shared between the producers and consumers. The overall effect on the market is a fall in price and increase in quantity.



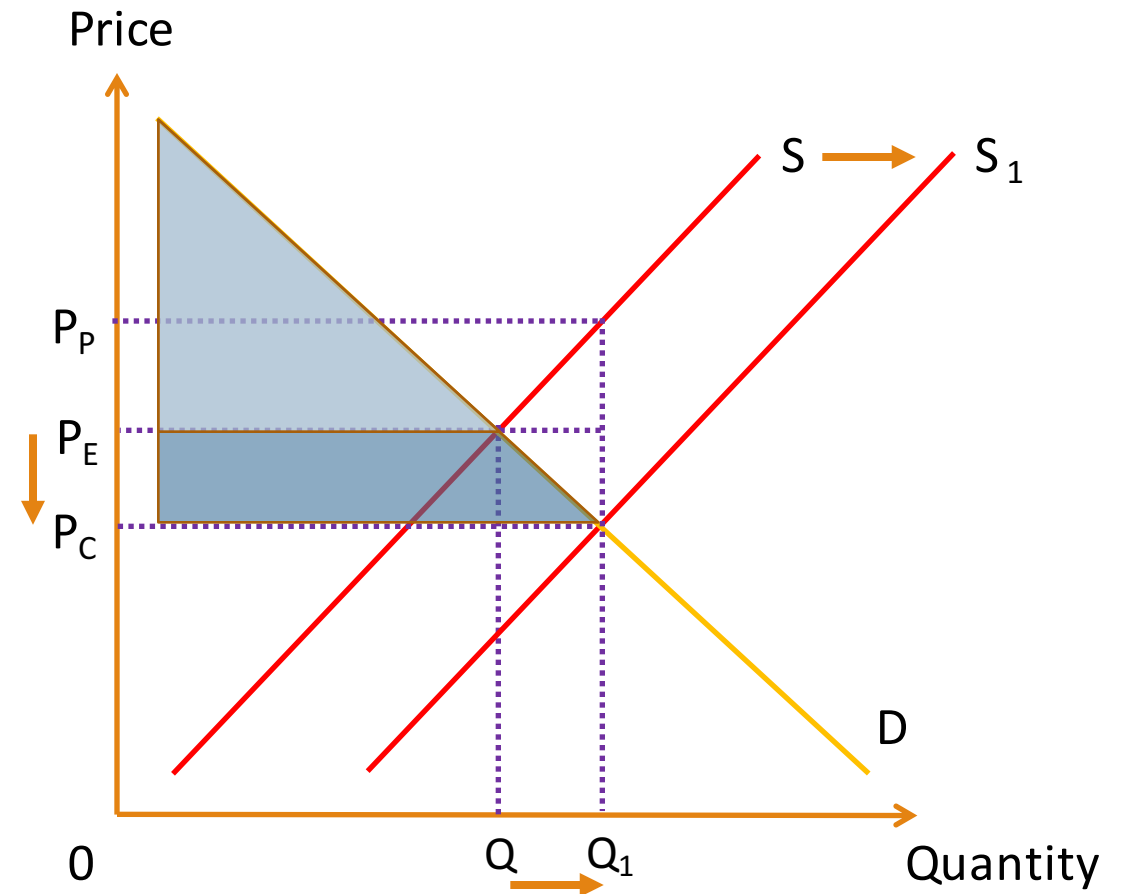
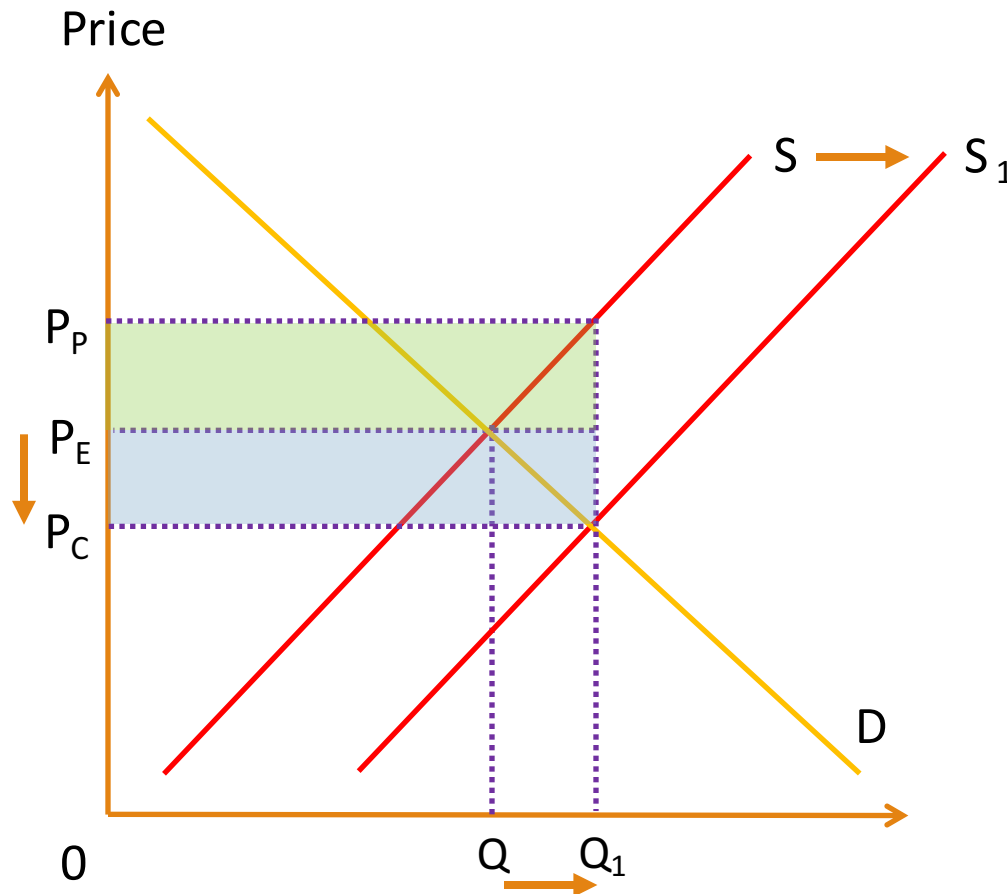
Consumer & Producer Surplus

Consumer surplus is the triangular area above price, but below the demand curve. It shows the additional value gained by the consumers as they are getting a lower market price than the price they are willing to buy/demand the good at.

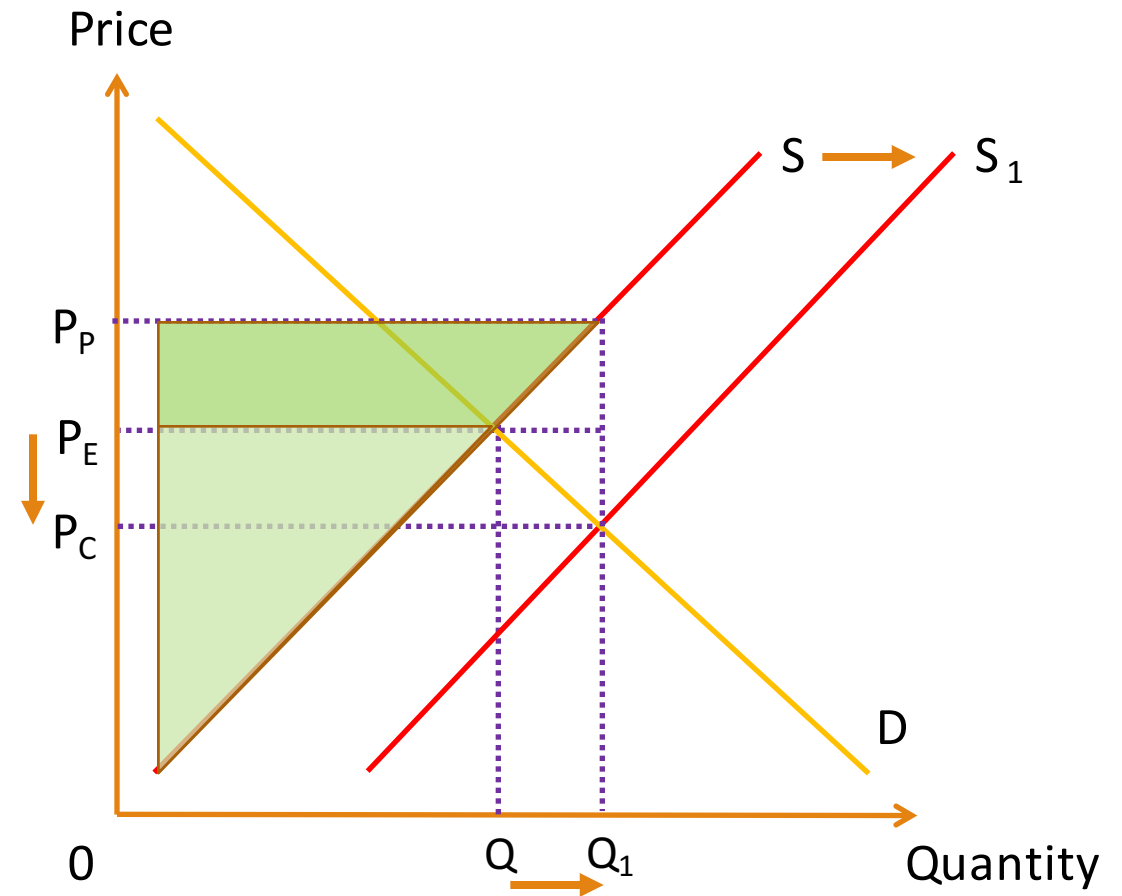
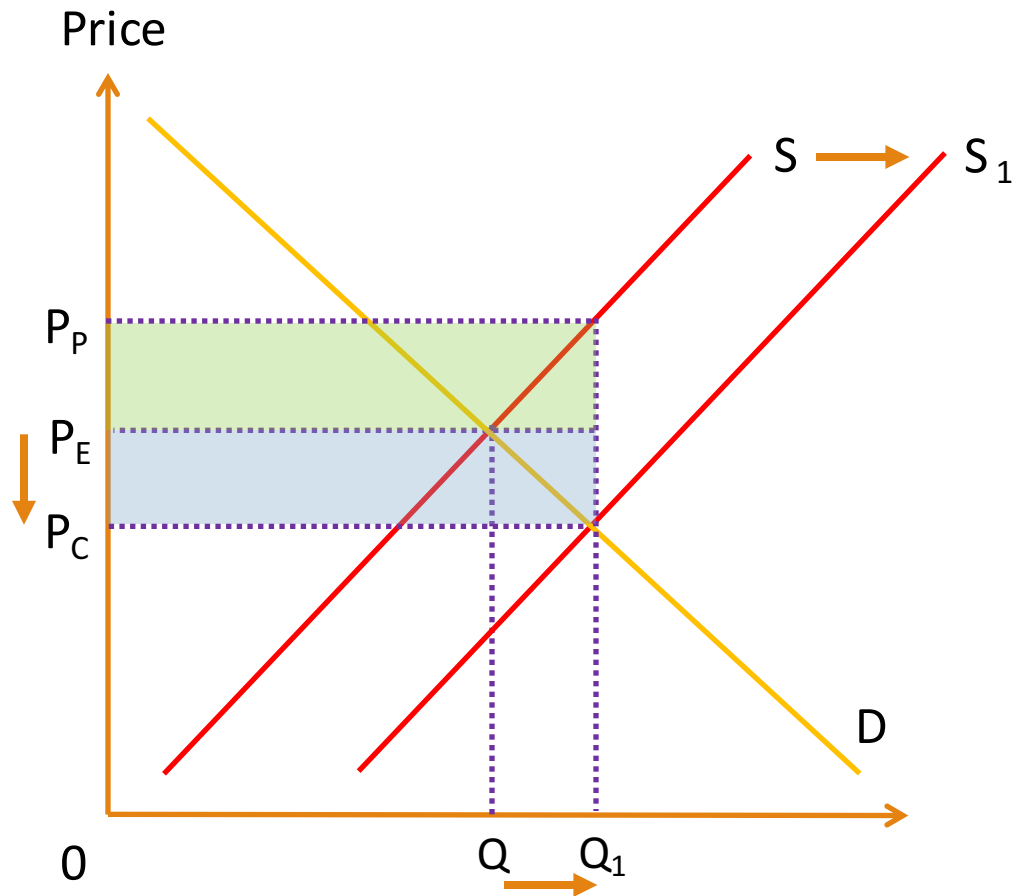
Producer surplus is the triangular area below price, but above the supply curve. It shows the additional value gained by the producers as they are getting a higher price than the price they are willing to supply the good at.



Subsidies Increase Consumer Surplus



Subsidies Increase Producer Surplus



Subsidy Example

One day, the Pirates of the Caribbean Government found out the miraculous healing powers of coconut water.

They decided to subsidize it for £2 per liter such that it can be consumed at £2 instead of the current £3. As a result, market quantity increased from 6 to 8.

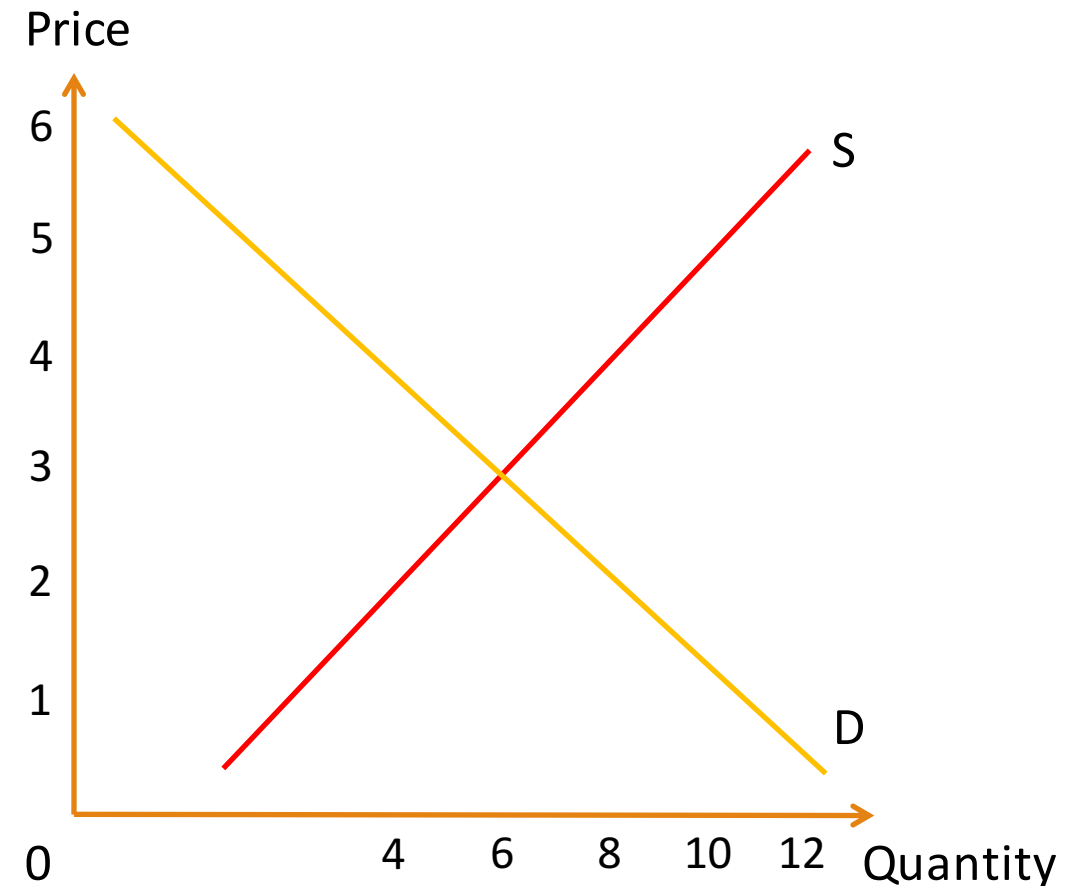
Work with your neighbors to draw a D&S diagram involving the subsidy.



Subsidy Example

Remember to show clearly the area of subsidy received by the producer, by the consumer, and paid by the government.

- Try to calculate the total amount of the subsidy the government has to pay.
- Next, try and calculate how much of the subsidy is received by the producer.



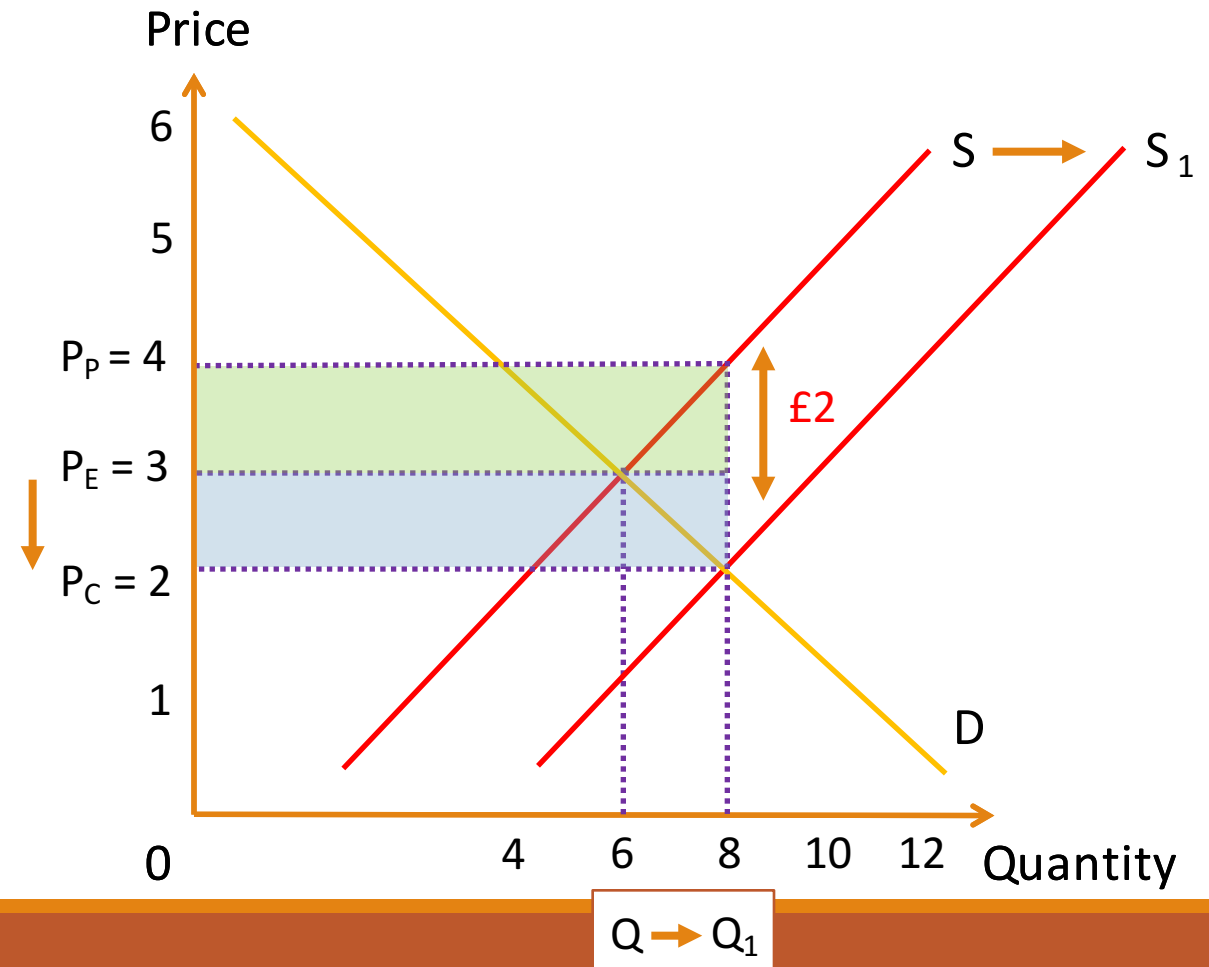
Subsidy Example

Total amount of subsidy the government has to pay (rectangular area):

$$(\text{£}4 - \text{£}2) \times 8 = \text{£}16$$

Subsidy received by the producer (blue area):

$$(\text{£}3 - \text{£}2) \times 8 = \text{£}8$$



Subsidies and Price Elasticity of Demand

Similar to taxes, the amount of subsidy received by the consumer vs the producer depends on the price elasticity of demand and supply.

For price elasticity of demand, the amount of subsidy passed on to the consumers depends on how much the consumer is willing to buy up the increase in quantity produced, given a fall in price. This determines the amount of subsidy the firm passes on to the consumer.

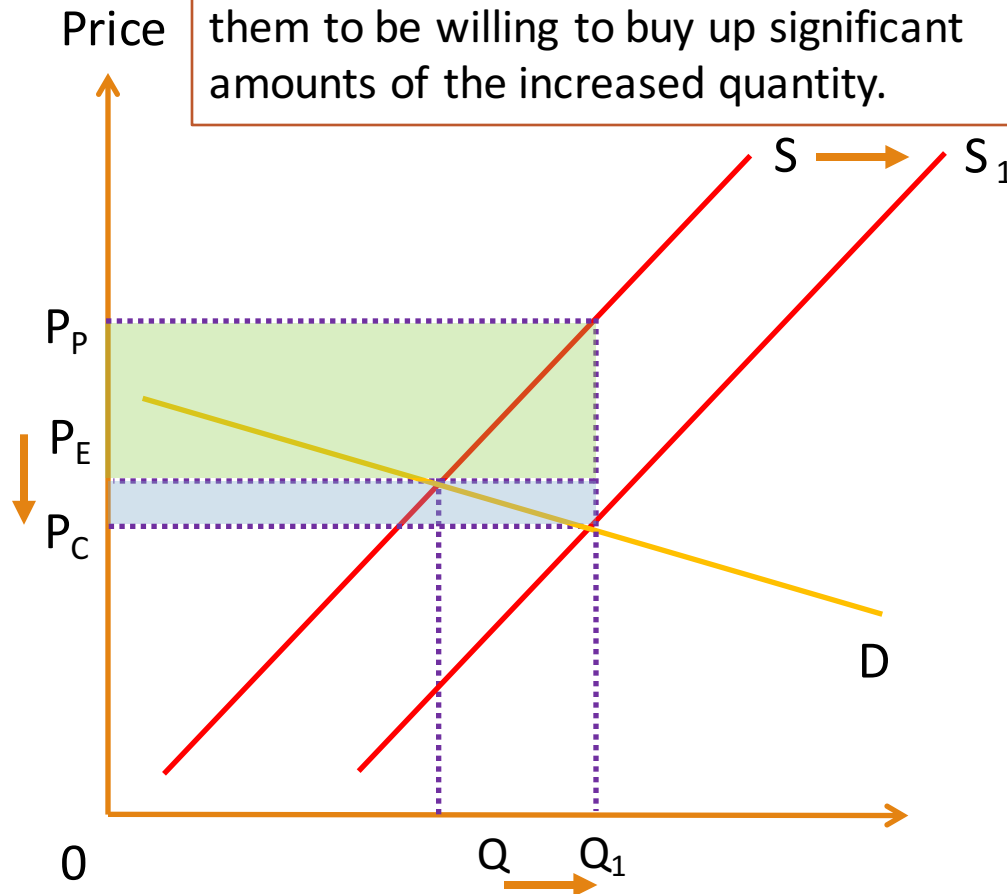
For example, renewable energy producers need to pass on a large amount of their subsidy to increase energy consumption of consumers, as the amount of energy we consume tend not to change despite of a price decrease (PED inelastic); whereas handbag producers will only need to pass on a small amount of subsidy for us to buy significantly more handbags due to a small discount.

Subsidies and Price Elasticity of Demand



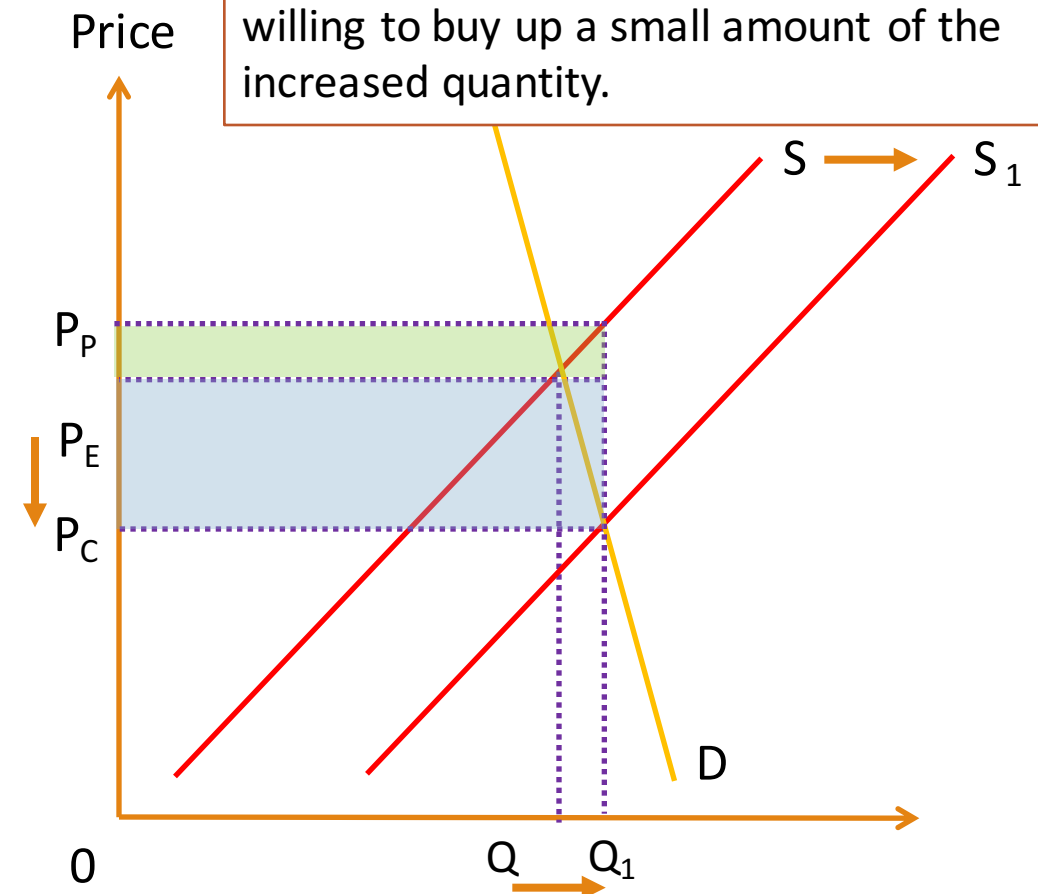
Elastic PED

Producers only need to pass on a small amount of the subsidy to consumers for them to be willing to buy up significant amounts of the increased quantity.



Inelastic PED

Producers need to pass on a big amount of the subsidy to consumers for them to be willing to buy up a small amount of the increased quantity.



Subsidies and Price Elasticity of Supply

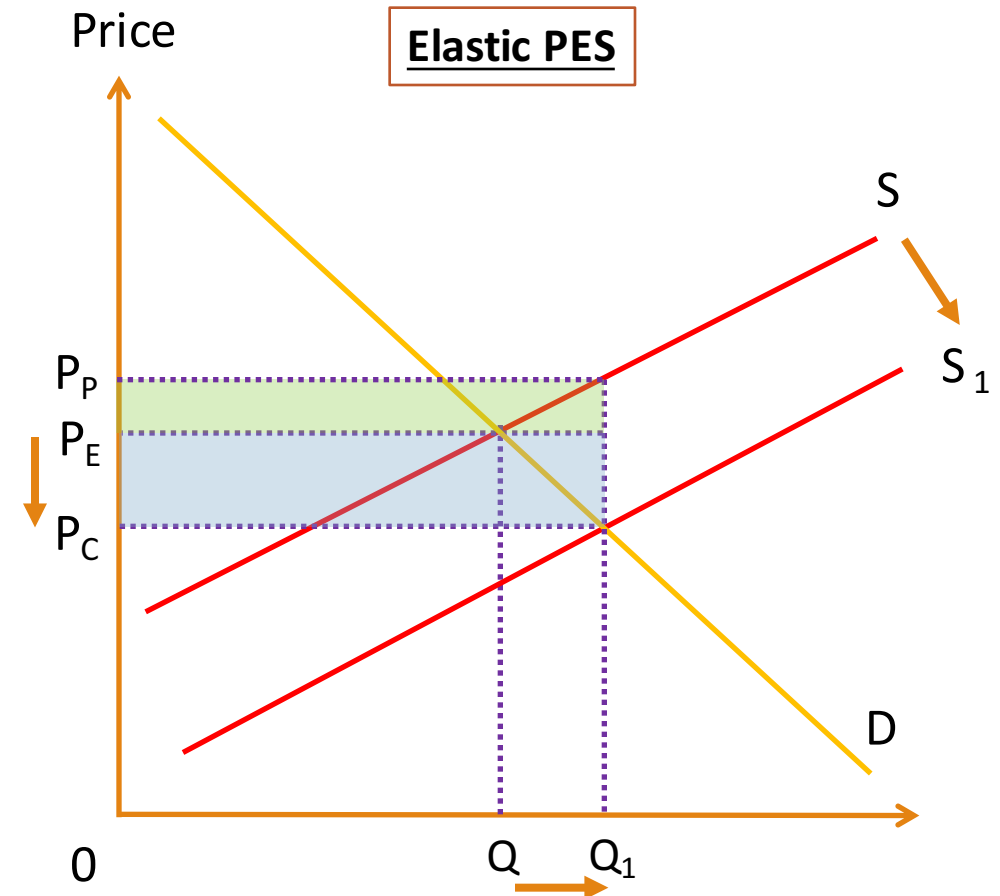
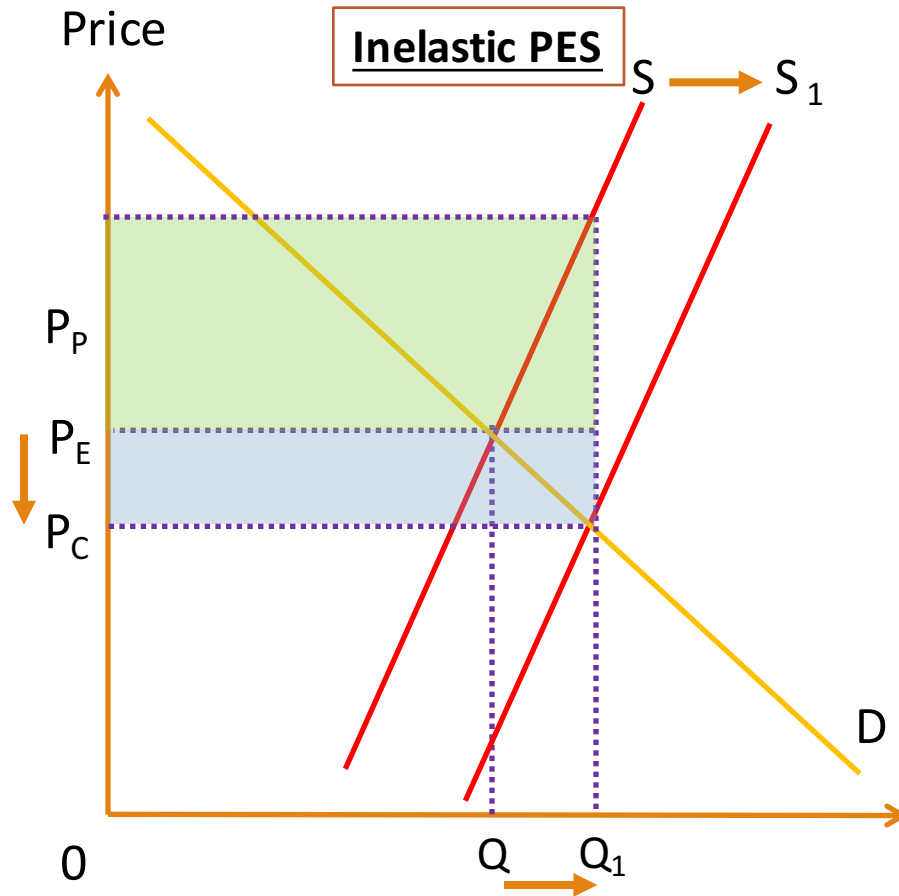
What about elasticity of supply? How will it change the subsidy given to consumers and producers? Let's draw a diagram to find out!

I will ask two pairs to draw the diagram on the whiteboard. Once your name has been called, you can nominate a friend to come out with you to help.



Subsidies and Price Elasticity of Supply

The more inelastic the supply curve, the higher the subsidy received by the producer. This is because a large increase in price received by the producer is required to increase output (quantity produced) in the market.



Evaluating Subsidies

- Subsidies can be effective in promoting consumption of a good by reducing market price
- A subsidy has limited effect on increasing market quantity when PED is inelastic, since a large amount of subsidy can only cause a small increase in purchasing necessities
- How much the subsidy actually benefits the consumer/producer depends on how much more consumers will buy given a discount (PED), and how difficult it is to produce it (PES)
- Subsidies are an opportunity cost to the government, as they need to pay for it, which means less can be spent on other goods and services like healthcare and education
- There can be government failure i.e. there is not enough information to ensure the right amount of subsidy is set in the market

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