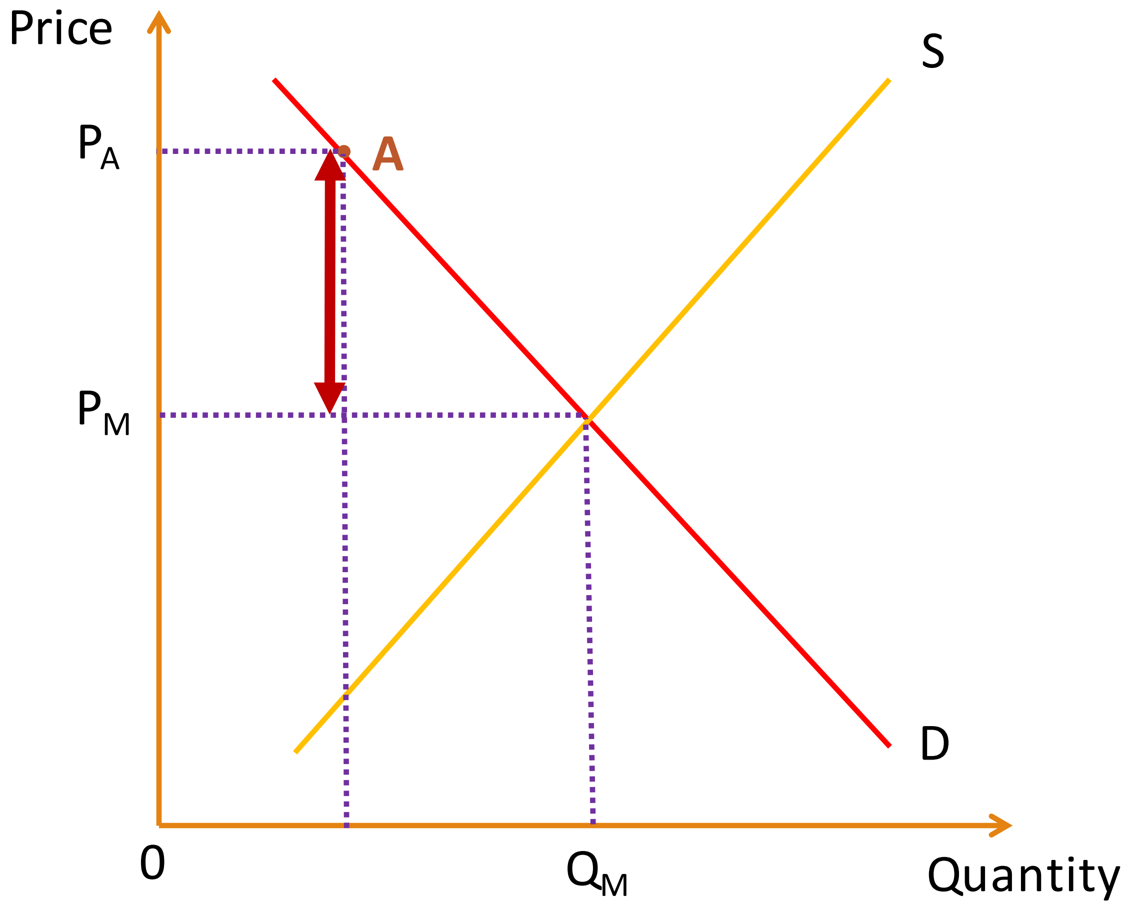
Consumer & Producer Surplus

GCE A-LEVEL & IB ECONOMICS

Consumer Surplus

Consumer surplus is the difference between the price the consumer is willing to pay, and the market price they are paying the good for.

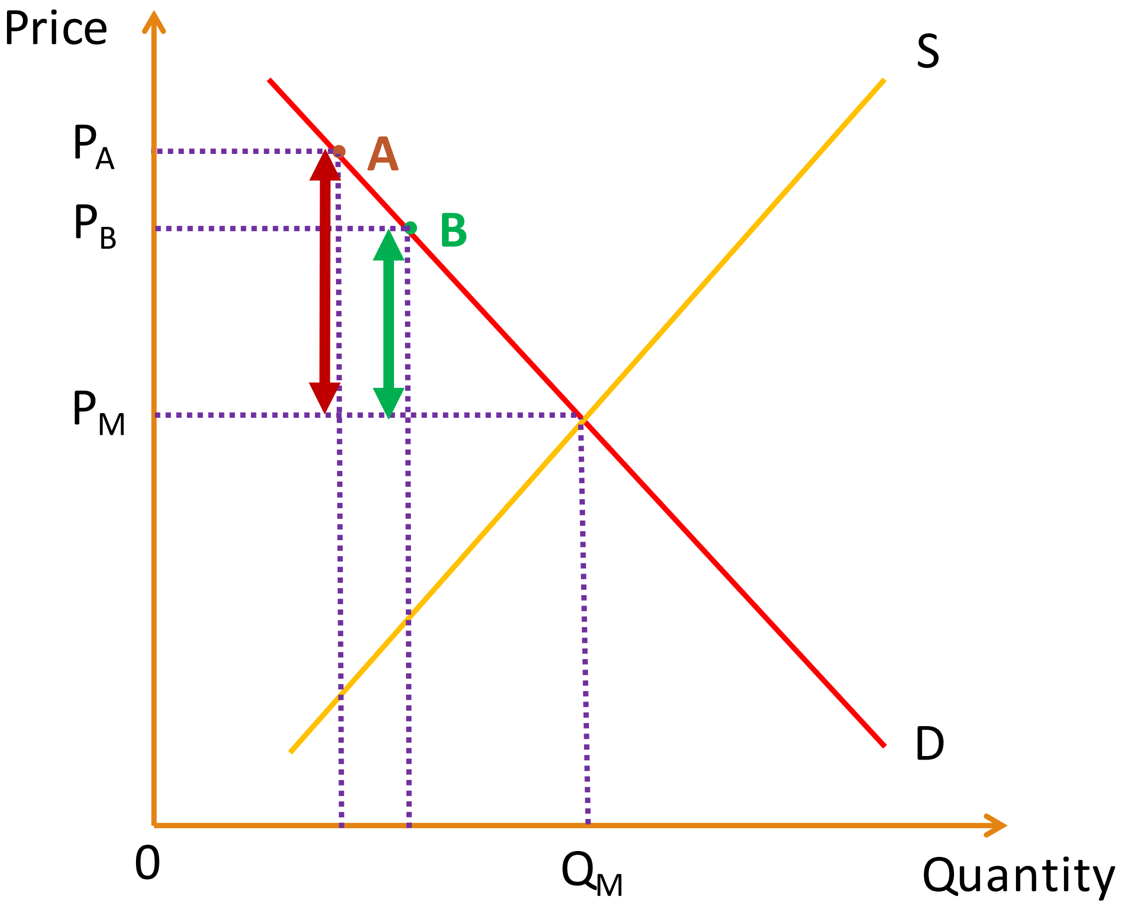
In the diagram, consumer A on the demand curve is willing to pay a price of P_A to acquire the product. But because of the market mechanism, he is able to acquire the product at market price P_M. As a result, he saved the amount $P_A - P_M$ (red arrow), which is his consumer surplus.



Consumer Surplus

Similarly, consumer B on the demand curve is willing to pay a price of P_B to acquire the product. But because of the market mechanism, he is able to acquire the product at market price P_M. Hence his consumer surplus is indicated by the green arrow.

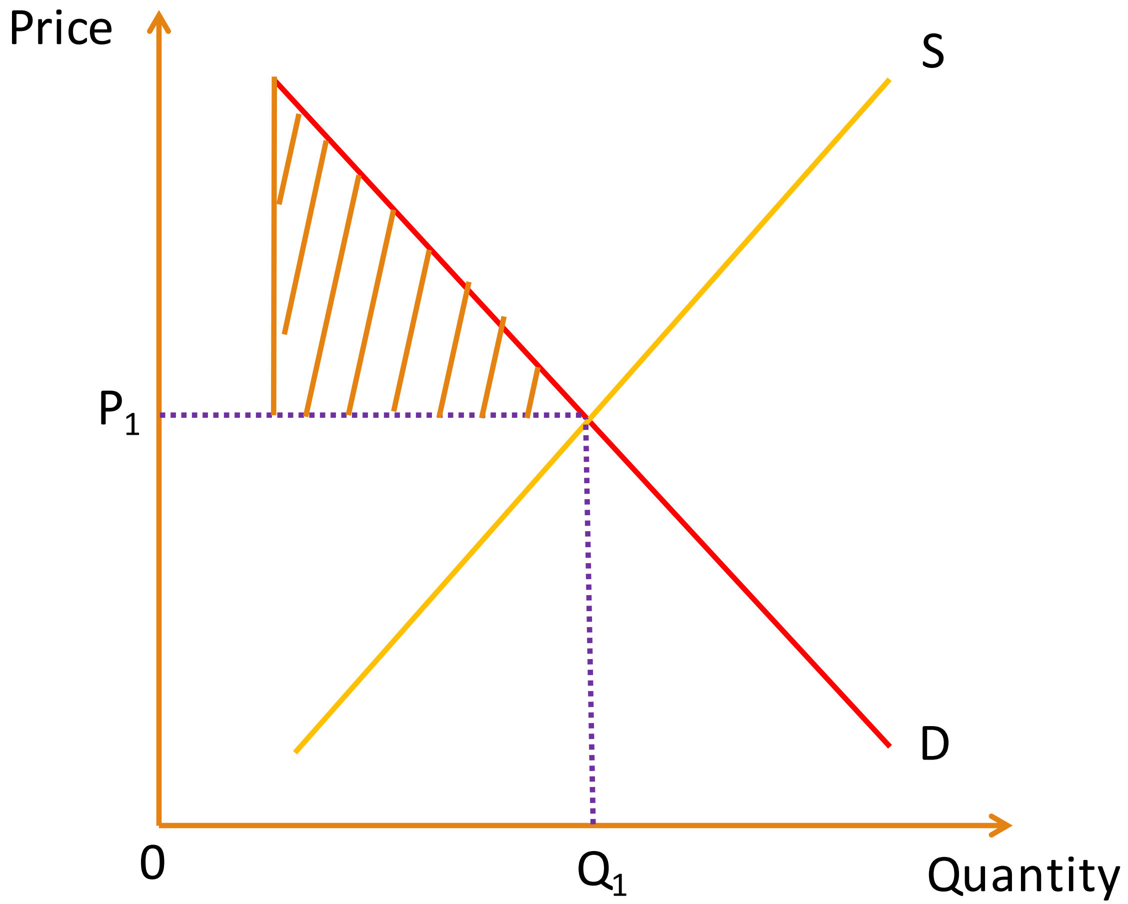
Consumer B gains a lower amount of surplus compared to consumer A as he is willing to pay less for the product, so he 'saved' less.



Consumer Surplus

If we combine the consumer surplus for each consumer on the demand curve, total consumer surplus for the market is the triangular area above price, but below the demand curve.

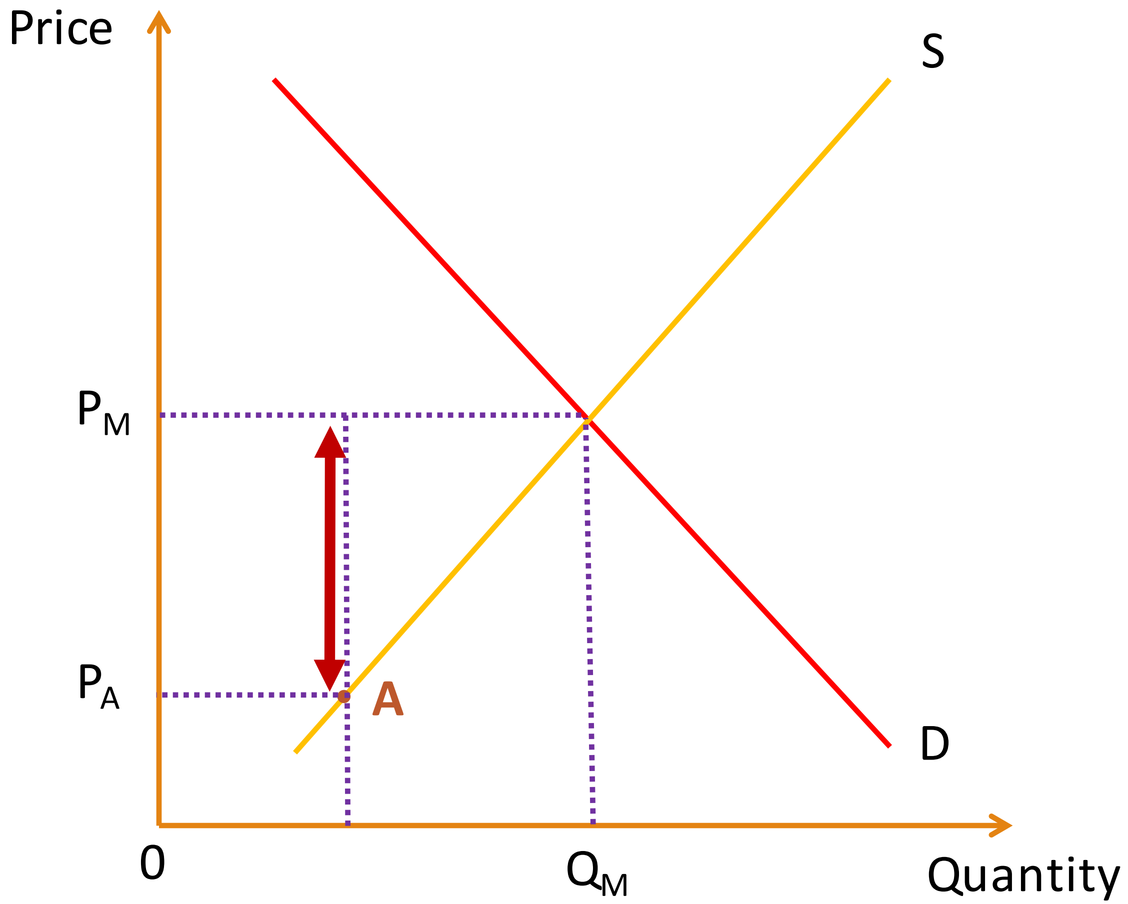
It shows the total additional value gained by the consumers as they are getting a lower market price than the price they are willing to buy/demand the good at.



Producer Surplus

Producer surplus is the difference between what the price the producer is willing to sell at, and the market price they are actually receiving from selling the good.

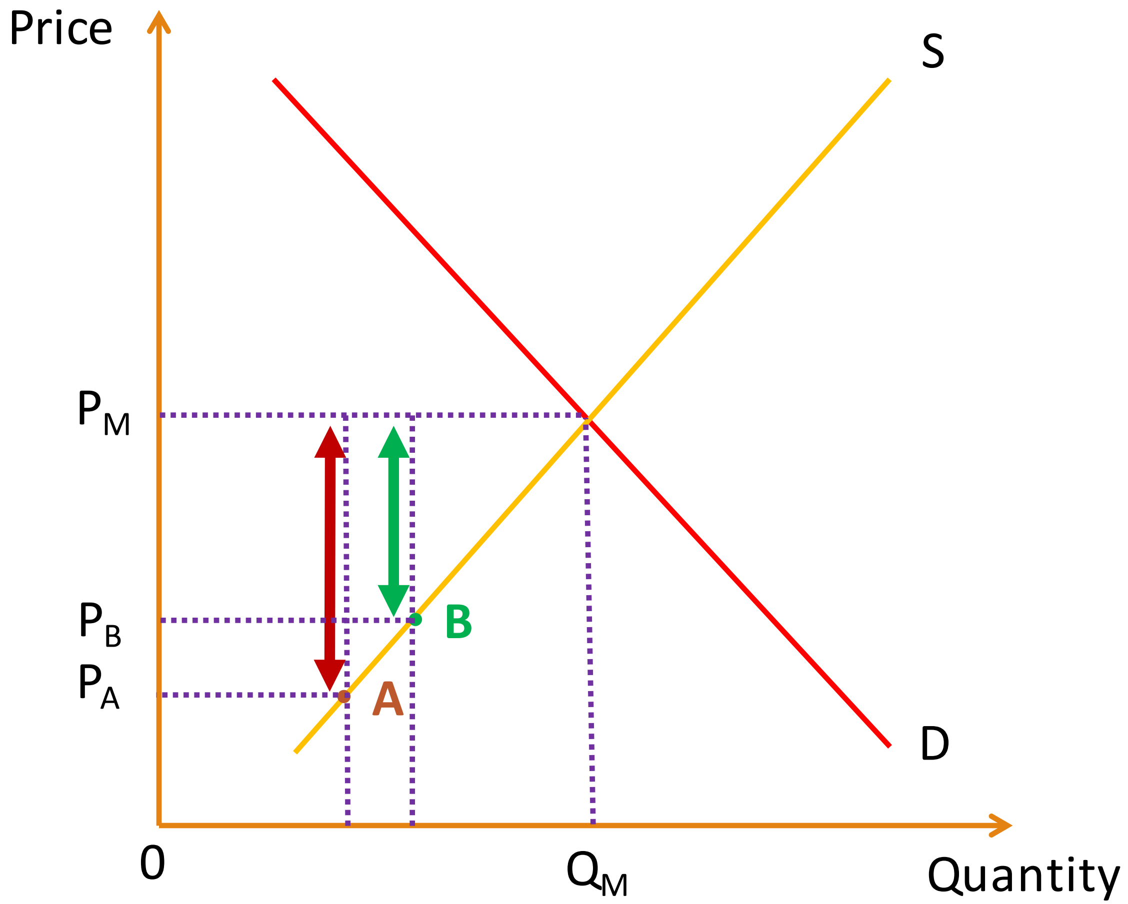
In the diagram, producer A on the supply curve is willing to sell his good at price P_A. But because of the market mechanism, he is able to sell the good at market price P_M. As a result, he earned the additional amount P_M - P_A (red arrow), his producer surplus.



Producer Surplus

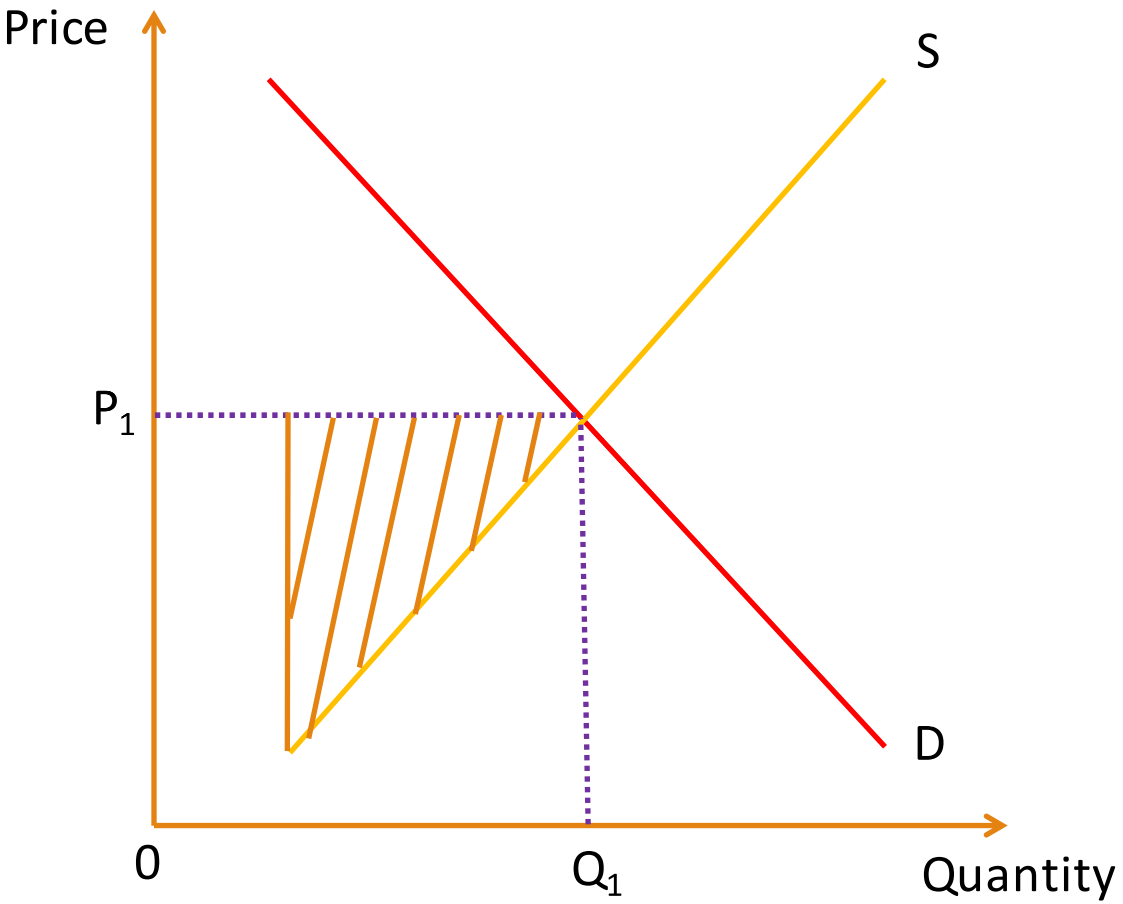
Similarly, producer B on the supply curve is willing to sell the good at price P_B. But because of the market mechanism, he is able to sell it at market price P_M. Hence his producer surplus is indicated by the green arrow.

Producer B gains a lower amount of surplus compared to consumer A as he is hoping to sell to good for a higher price, hence 'earning' less surplus from the market mechanism.



Remember Producer & Consumer Surplus?

If we combine the producer surplus for each producer on the supply curve, total 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.

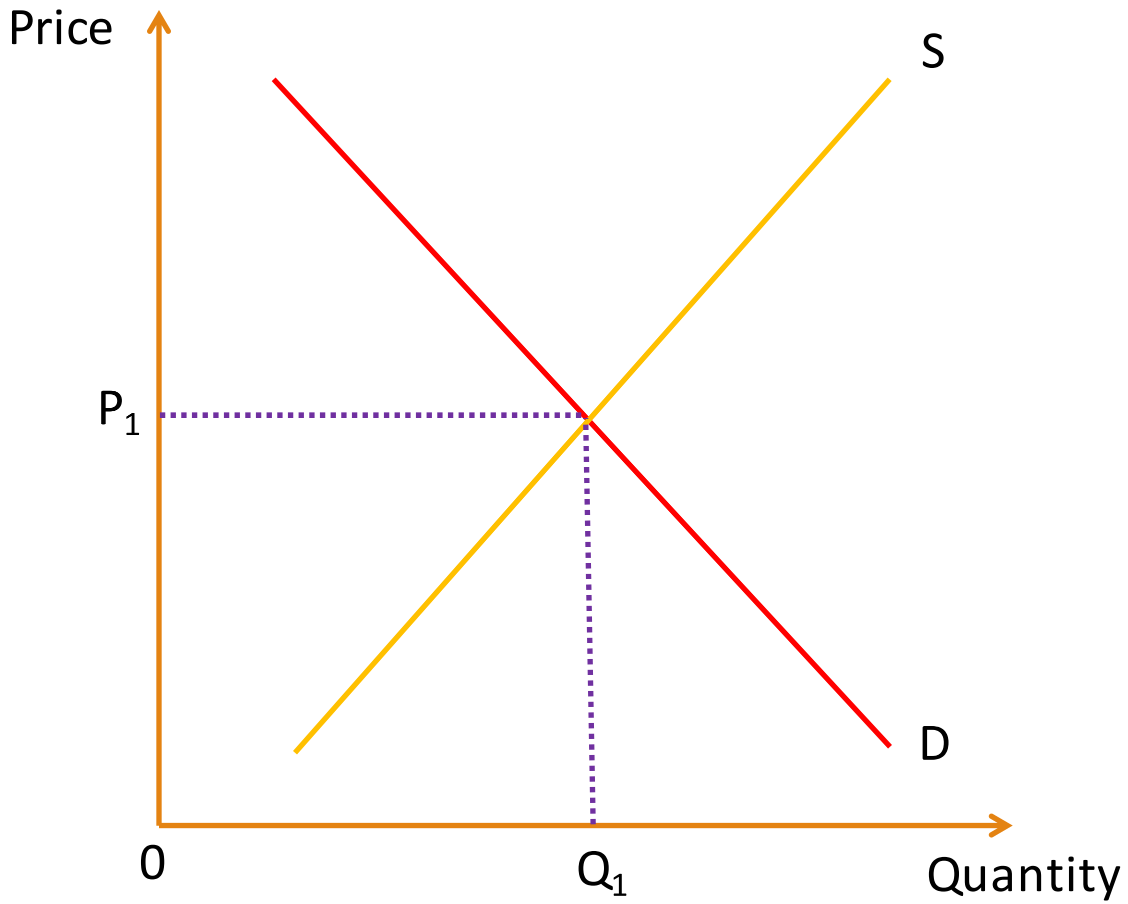


Producer & Consumer Surplus Practice

Where is producer surplus in the diagram? Shade it orange

Where is consumer surplus in the diagram? Shade it blue

Explain why that is the case.



Producer & Consumer Surplus Practice

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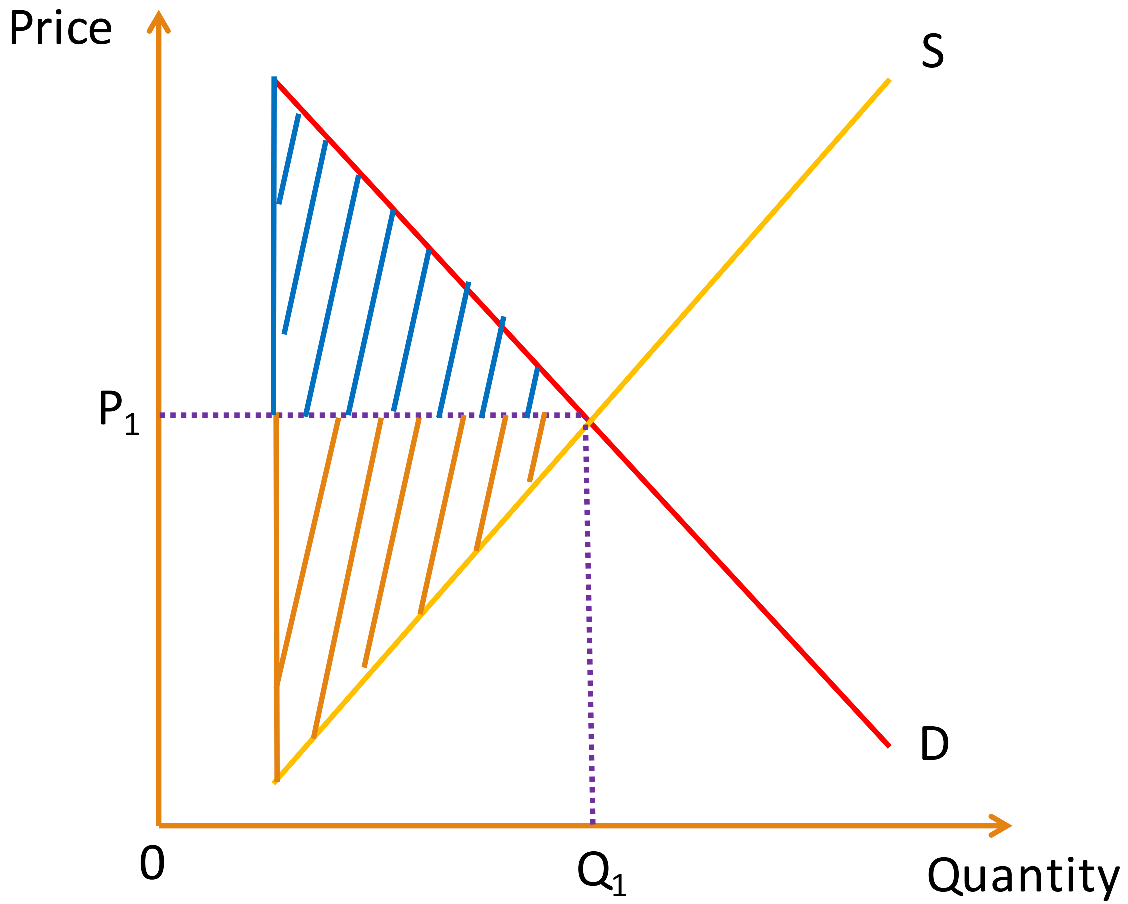
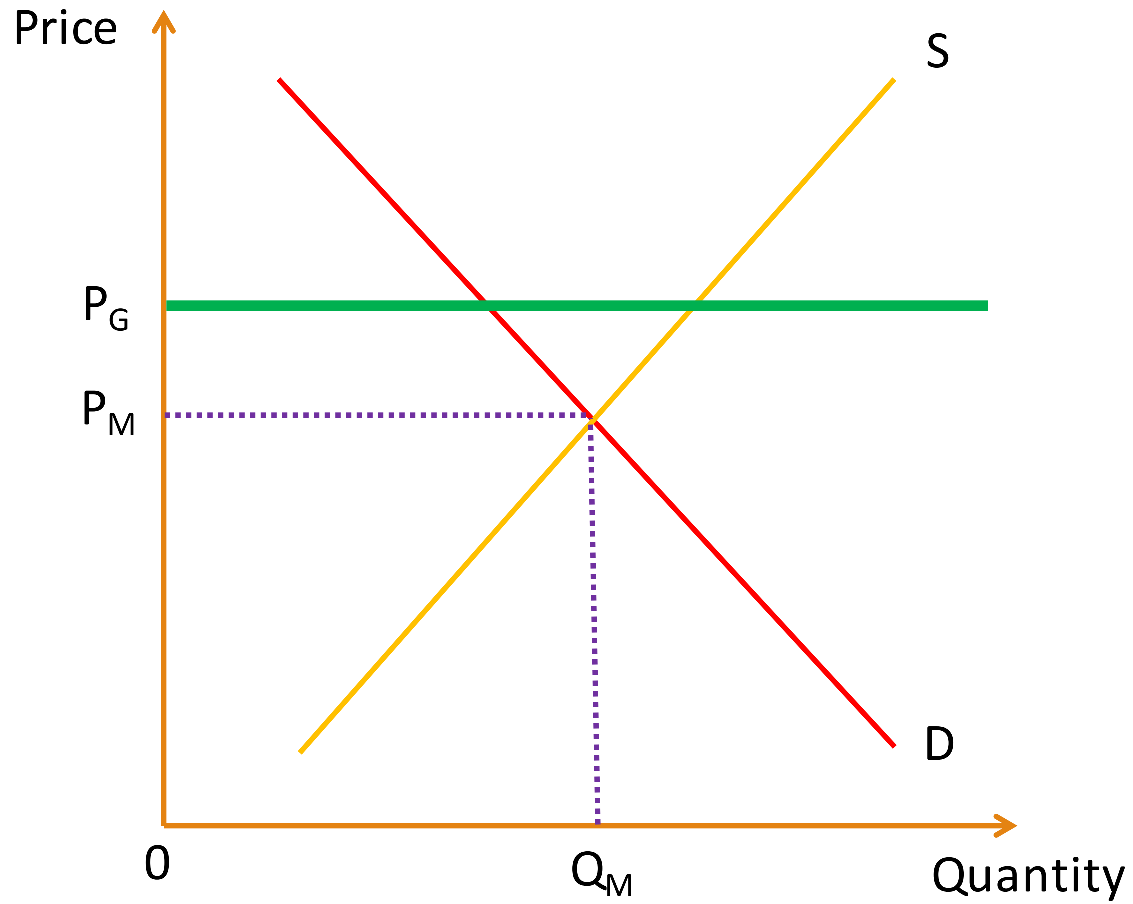


Change in Producer/Consumer Surplus

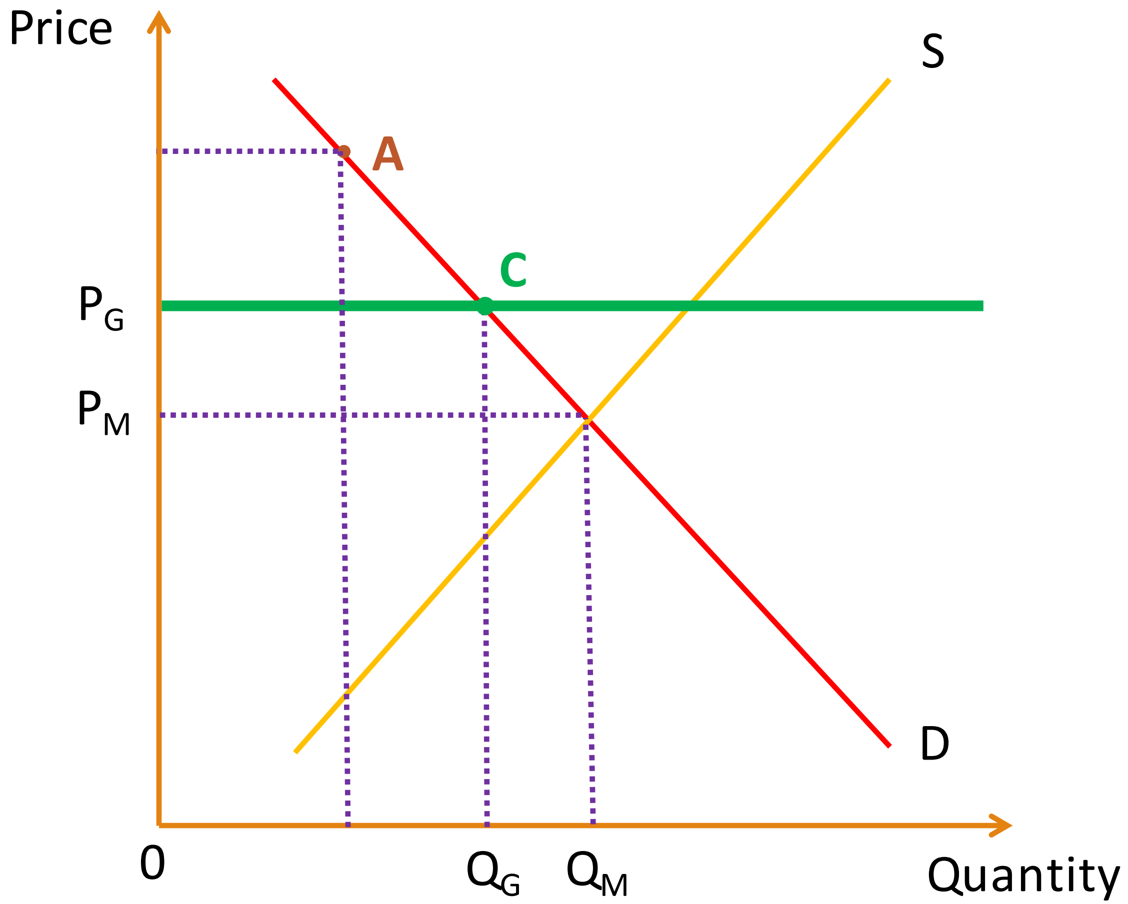
What if a monopoly firm or government sets a price that is at P_G, forcing up the market price?

What do you think will happen to market quantity, consumer and producer surplus?



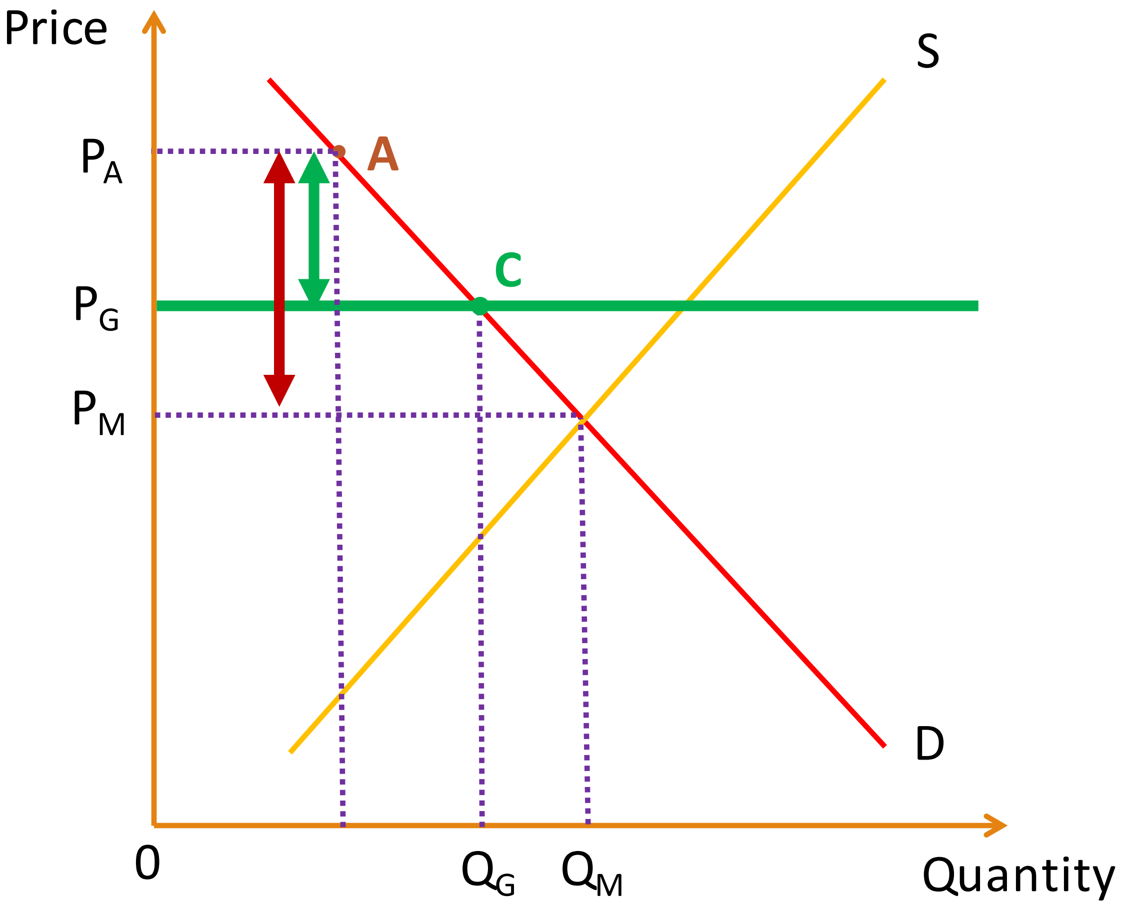
Change in Producer/Consumer Surplus

As price P_G intersects the demand curve at C, quantity demanded and transacted in the market will fall from Q_M to Q_G. Hence, consumer/producer surplus from Q_M to Q_G will be removed.



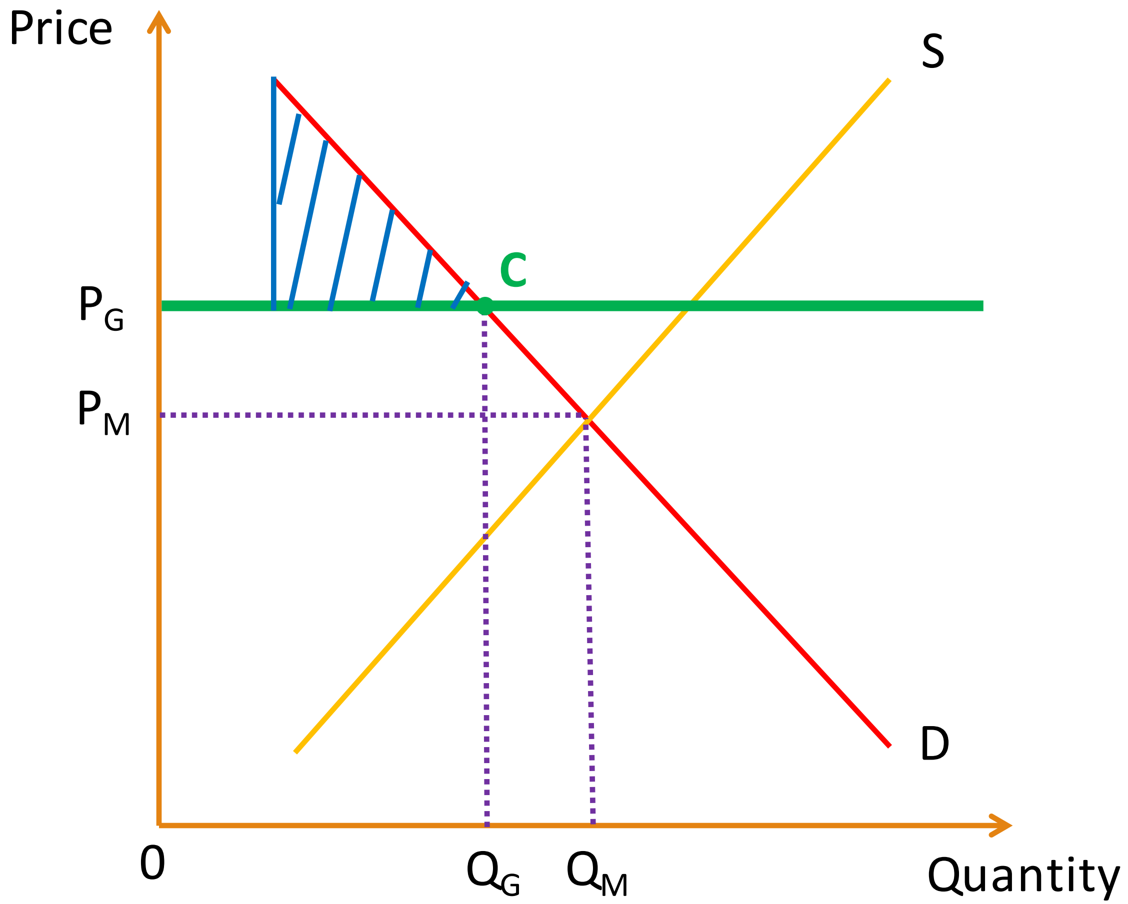
Change in Producer/Consumer Surplus

For consumer A, the original consumer surplus of the red arrow when he can purchase the good at market price P_M will be reduced to the green arrow. This is because he can only purchase the good at the new government/monopoly price P_G, hence reducing the amount of money he 'saved'.



Change in Producer/Consumer Surplus

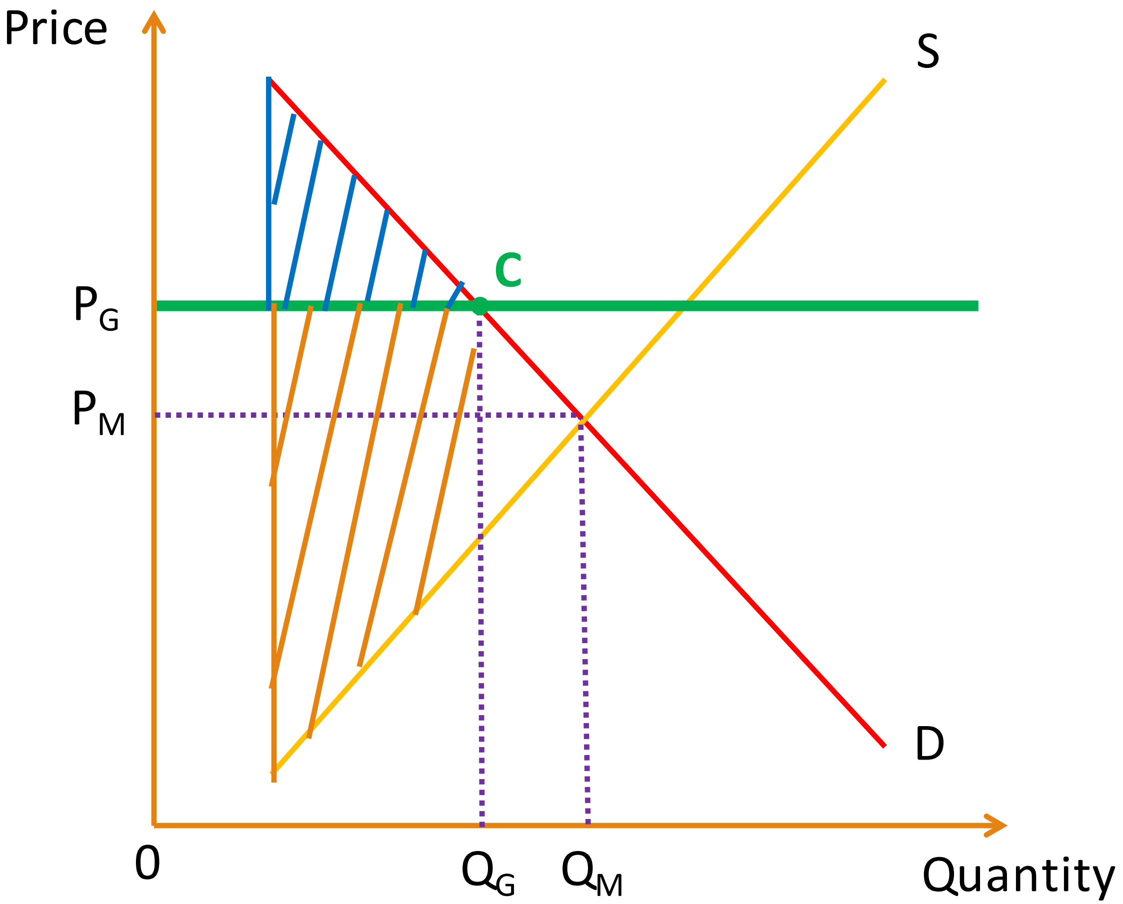
As a result, the total area of consumer surplus will be reduced for all consumers in the market since they are paying a higher price (blue).



Change in Producer/Consumer Surplus

On the other hand, producer surplus will increase as all producers will be able to sell at the higher government/monopoly price of P_G. This can be shown by the increase in the total producer surplus area (orange).

Hence we can see both a change in market price or quantity will affect both consumer and producer surplus.



Change in Producer/Consumer Surplus

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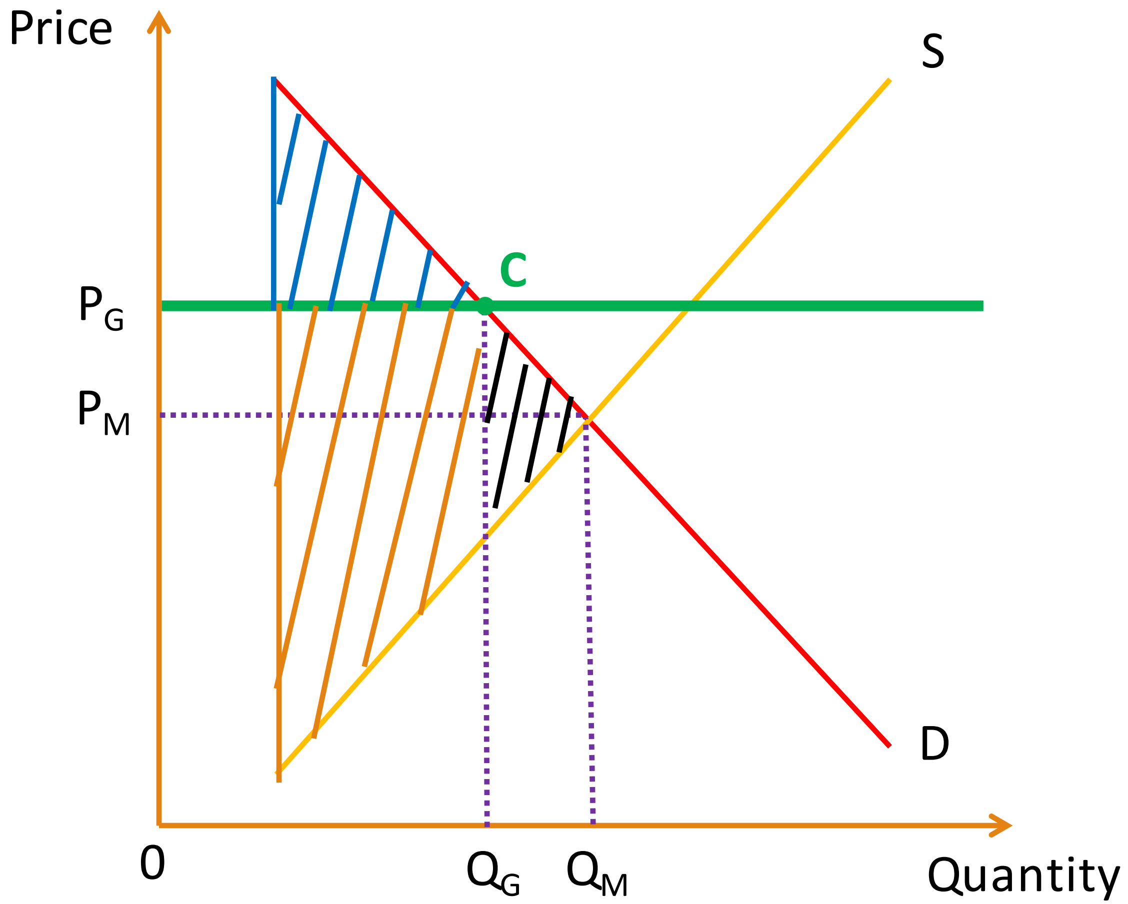
Last thing to note is that the consumer/producer surplus lost after the new price is set, is now not ‘earned’ or received by anyone (producer, consumer or the government). Because of that, it can be defined as welfare loss or deadweight loss. This area is shaded in black.

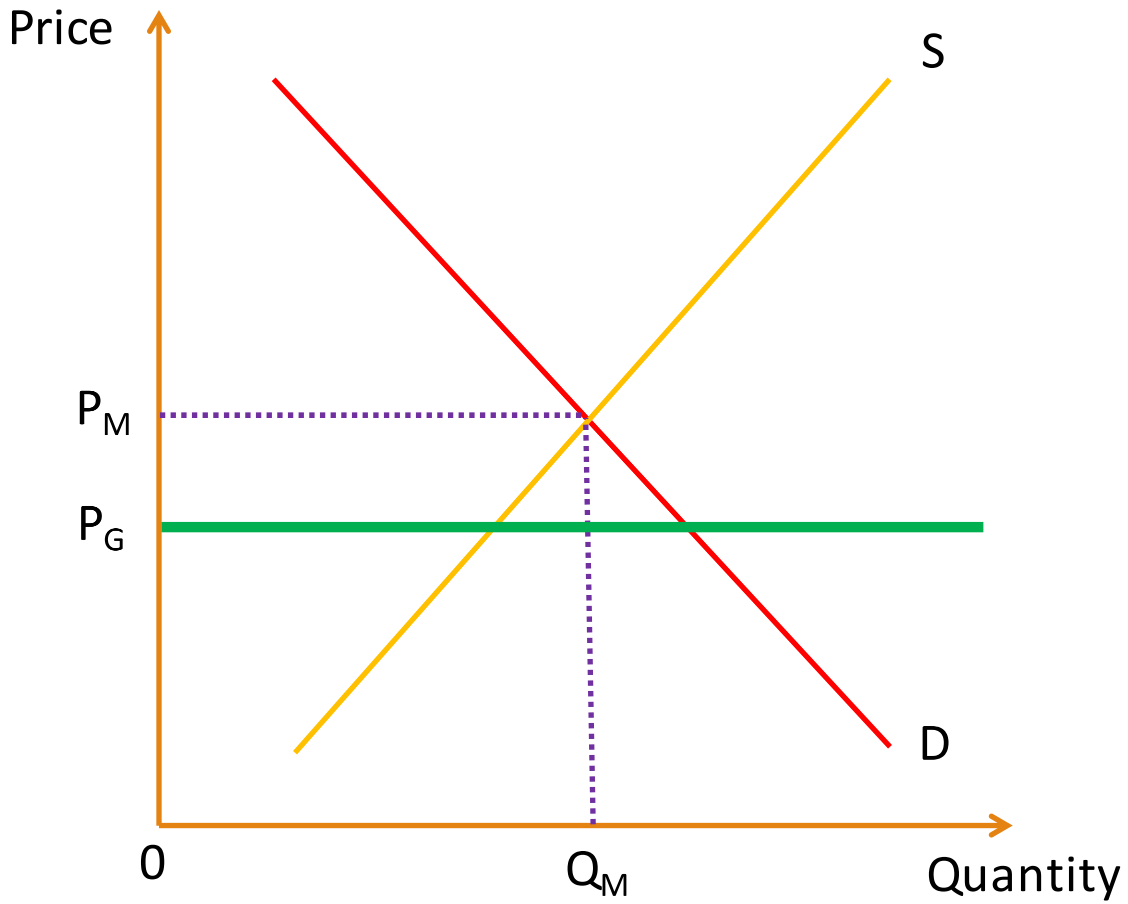
When there is welfare loss, it indicates that the market is experiencing market failure and allocative inefficiency.



Change in Producer/Consumer Surplus

Can you illustrate and explain the impacts if the government or monopoly set price is below the market price?

What do you think will happen to market quantity, consumer and producer surplus?



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