



### Sample: Economics of Enterprise - Shortage Comparison

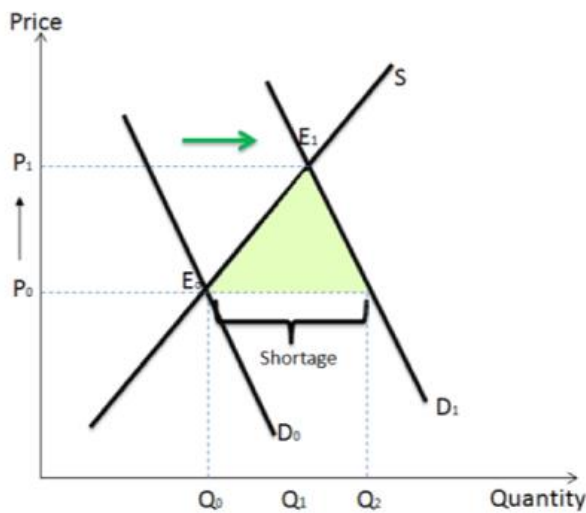
#### Part 1

- 1. d
- 2. b
- 3. c
- 4. b
- 5. c
- 6. b
- 7. d
- 8. d
- 9. b
- 10. e
- 11. c
- 12. c
- 13. b
- 14. c
- 15. a
- 16. d
- 17. a
- 18. g

#### Part 2

##### Question 1

a. These 2 factors are the sharp increase of demand for propane because of the very cold weather and the shortage of propane supplied because this increase was unpredictable. We can see the influence of these factors on the graph below.



b. This tells us that the shortage is big enough, because people even lower the temperature to spend the limited propane more rationally, so the factor of shortage is dominant. We can see on the graph above, that this shortage is significant.

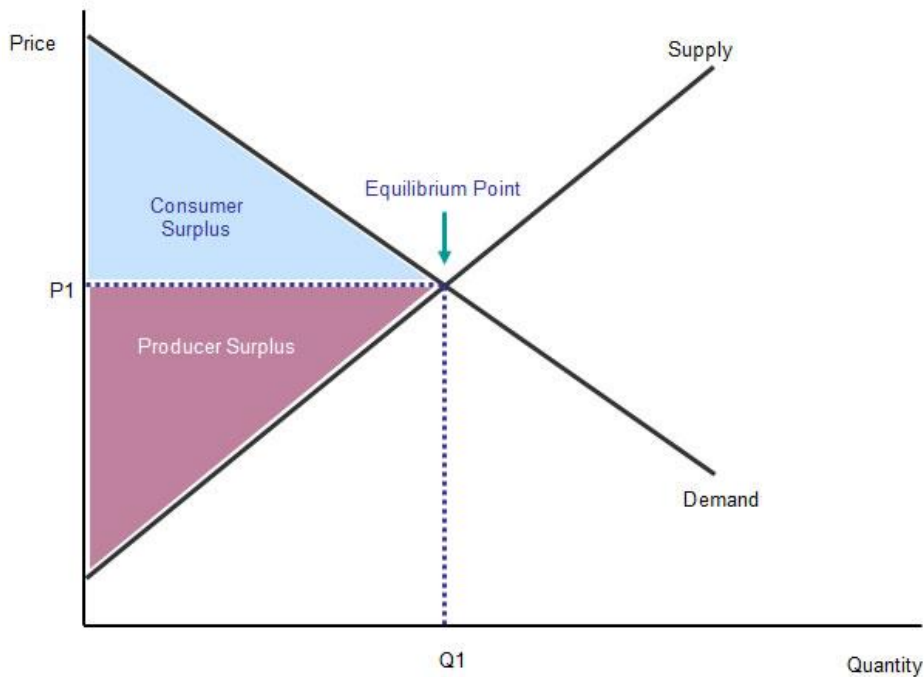


Question 2

a. The equilibrium is at the point where  $Q_d = Q_s$  and  $P_d = P_s$ , so:

$$20 - Q/50 = 5 + Q/100$$
$$3Q = 1500$$
$$Q = 500 \text{ gallons}$$
$$P = 20 - 500/50 = \$10$$

b.



To find consumer and producer surpluses we should find the squares of the triangles marked on the graph above. We also find  $P_d(Q = 0) = \$20$  and  $P_s(Q = 0) = 5$

$$\text{Consumer surplus} = 0.5 * (20 - 10) * 500 = \$2,500$$
$$\text{Producer surplus} = 0.5 * (10 - 5) * 500 = \$1,250$$
$$\text{Total surplus} = 2,500 + 1,250 = \$3,750$$

We see, that the consumer surplus is twice higher.

c. The market is producing the efficient quantity of gasoline, because as there are no taxes and



subsidies, there is also no deadweight loss, so the market is efficient (there is no information that the market is monopolistic, so it is efficient).

d. If we rewrite the equations of Ps and Pd:

Qd = 1000 - 50P  
Qs = 100P - 500

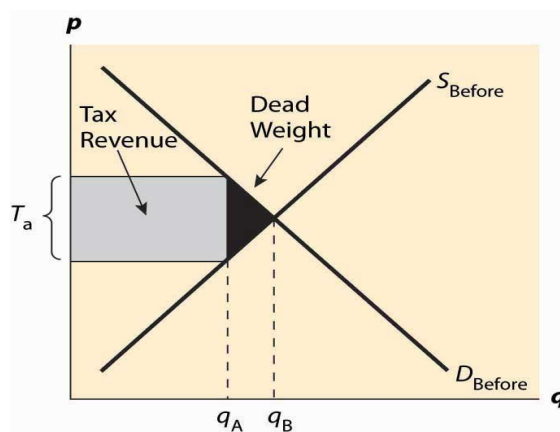
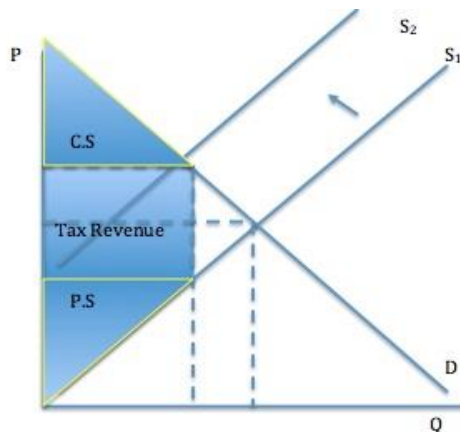
After imposing of the tax the equation of Qs will be the next:

Qs = 100(P + 0.6) - 500  
Qd = Qs  
1000 - 50P = 100(P + 0.6) - 500  
150P = 1560  
P = \$10.4  
Q = 1000 - 50\*10.4 = 480 gallons

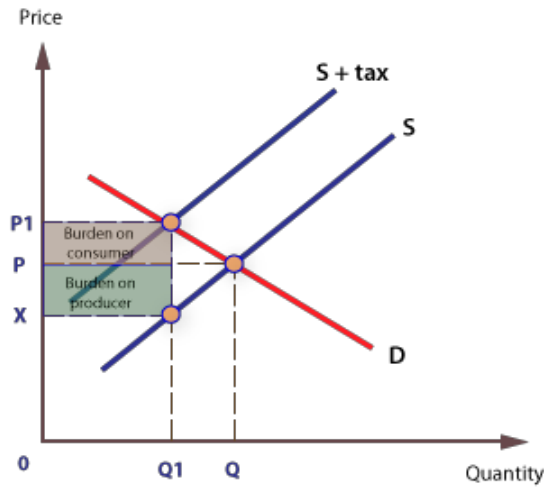
It implies to producers, because they are the first who increase the price, as they can't sell gasoline for the previous price without decreasing their revenue and profit as they can't decrease costs immediately.

e. Consumers bear the bigger tax burden, as the consumer surplus decreases while producer surplus increases. So, consumers are worse off after the implementation of the tax.

f. Market becomes inefficient, as deadweight loss is created after the implementation of the tax. Tax revenue will be TR = 0.6\*480 = \$288  
DWL = 0.5\*(500 - 480)\*(10.4 - 9.8) = \$6.

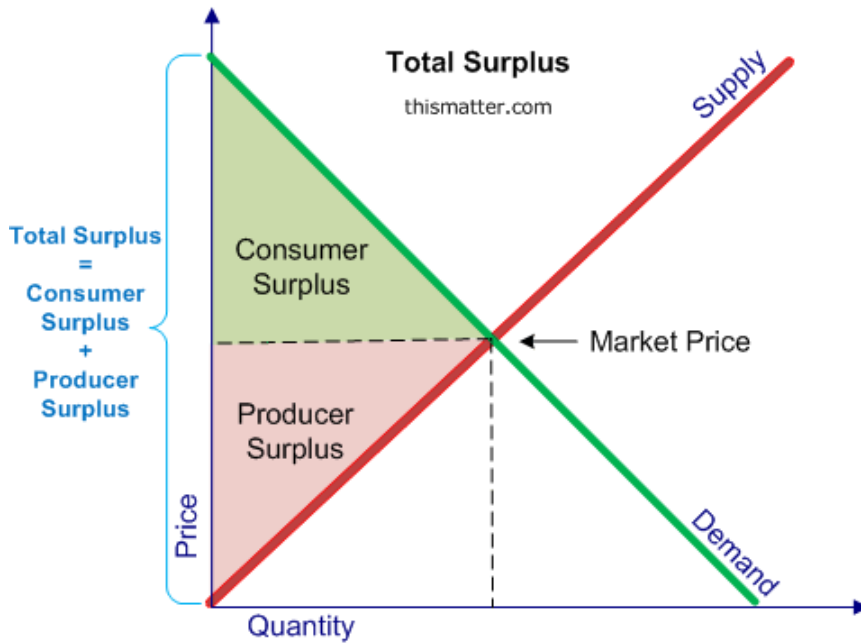


g. To make the full tax burden fall on producers the government should also set a price ceiling to make the equilibrium price unchanged. In this case the producers will pay the tax, as they will need to sell gas for the same price. Another assumption for such claim to become possible is that the demand for a good should be very elastic. Then the producers will not increase the price not to decrease significantly the quantity demanded and not to decrease their revenues.

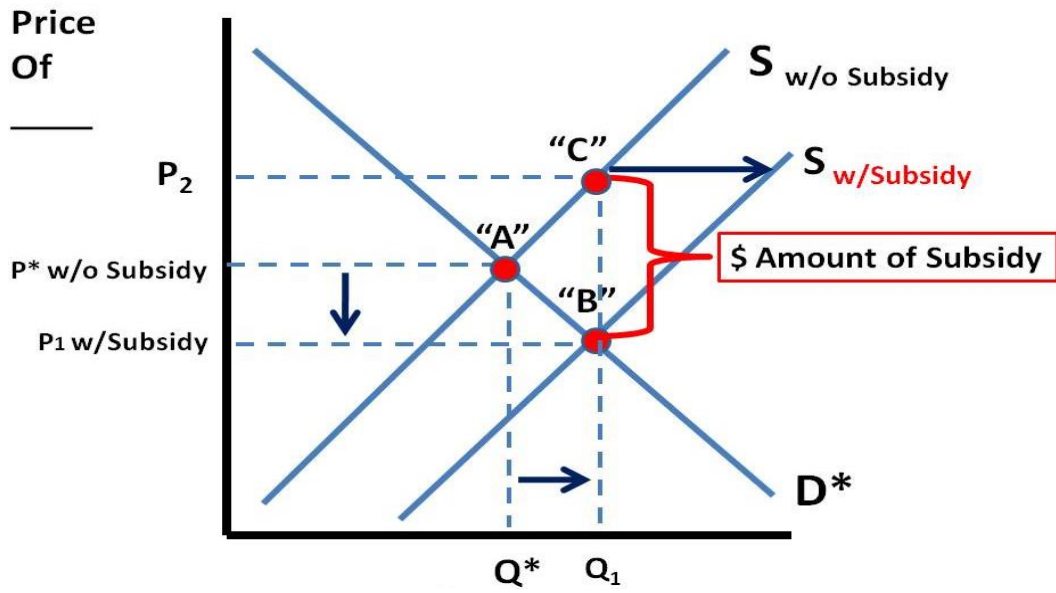


Question 3

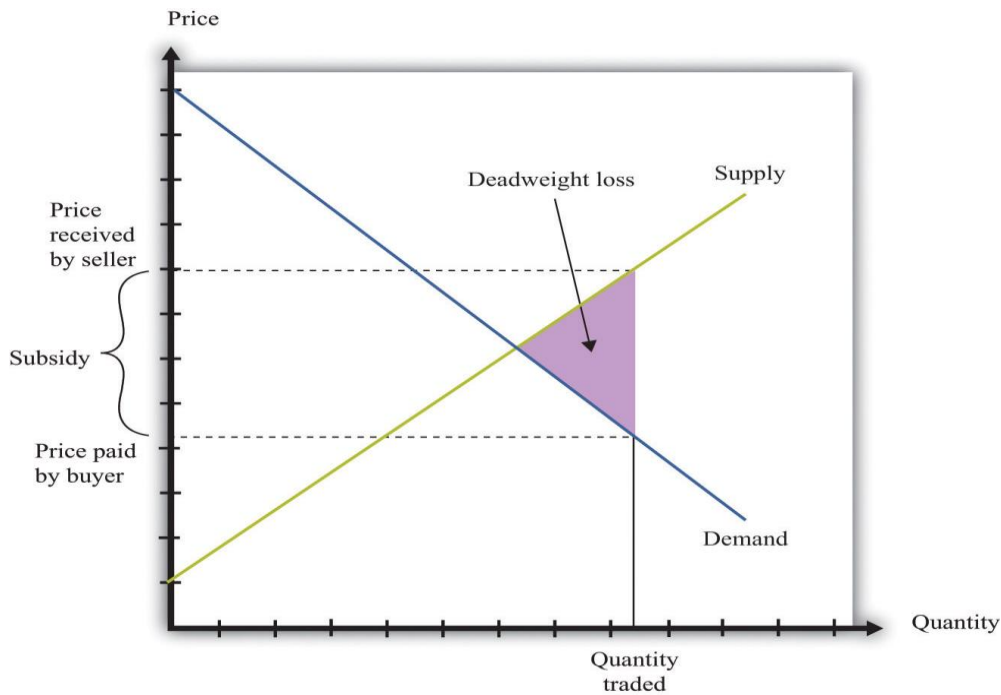
a.



b. As we can see on the graph below the equilibrium quantity of corn will increase, the price paid will decrease and price received will increase.

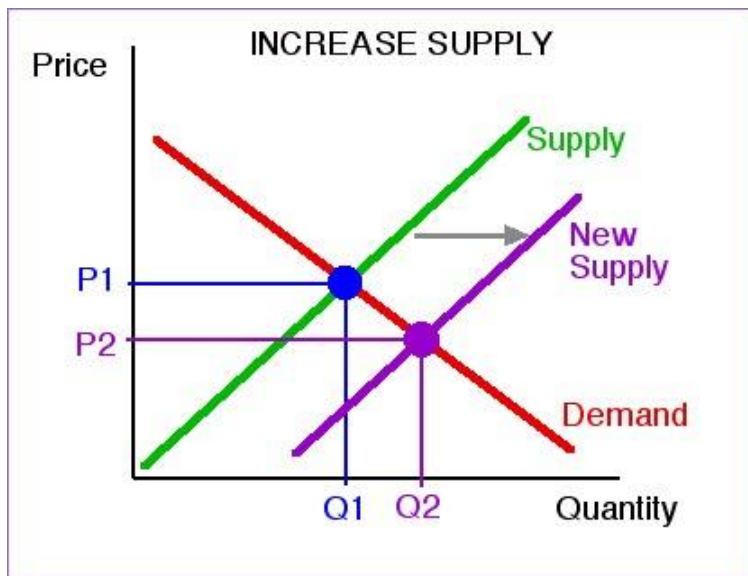


c. There will be a deadweight loss (you can see its amount on the graph below). The total surplus will increase comparing with the total surplus in the part a, but the market becomes inefficient.





d. The equilibrium price of HFCS will decrease and quantity will increase, as the inputs become cheaper.



e. If the goods are substitutes, the cross price elasticity is positive, if the price for HFCS falls, the demand for sugar also falls. So, the equilibrium price and quantity of sugar will decrease.

