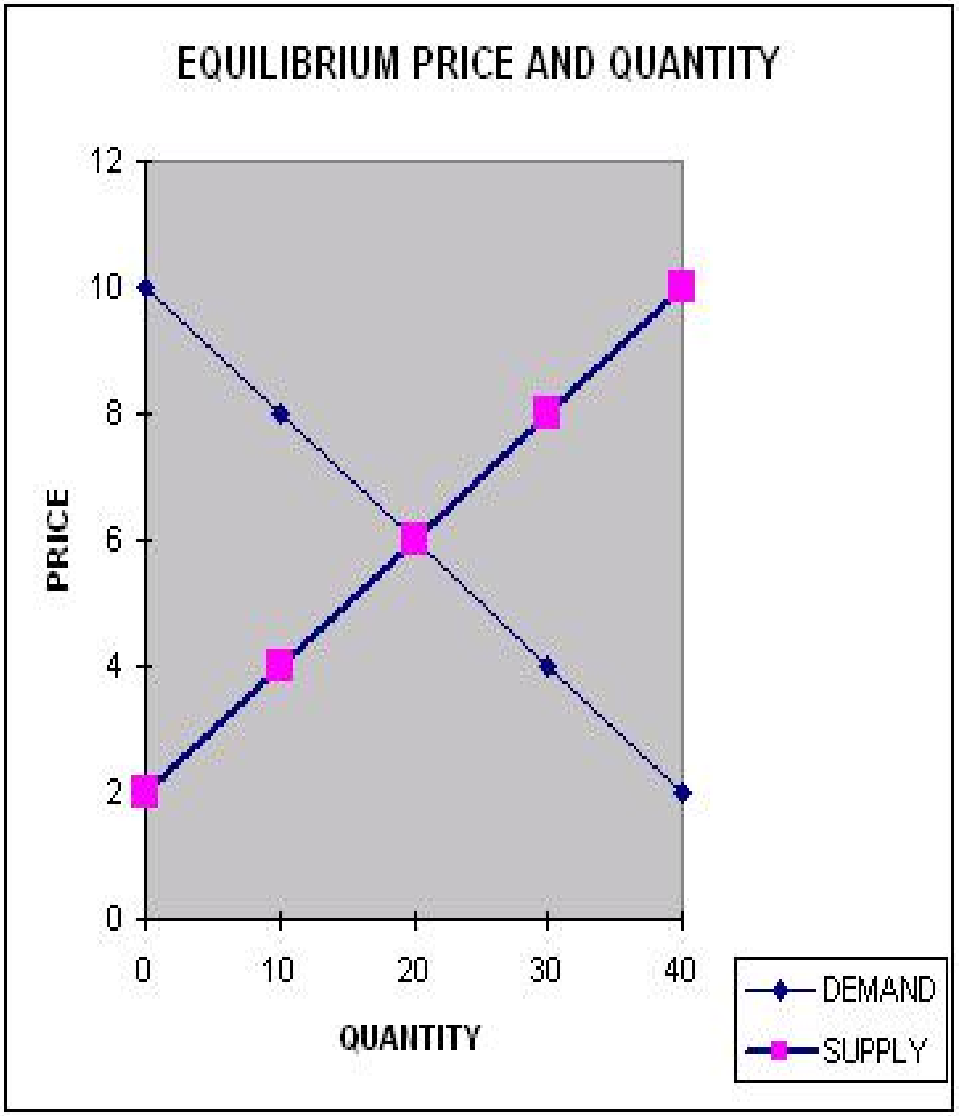
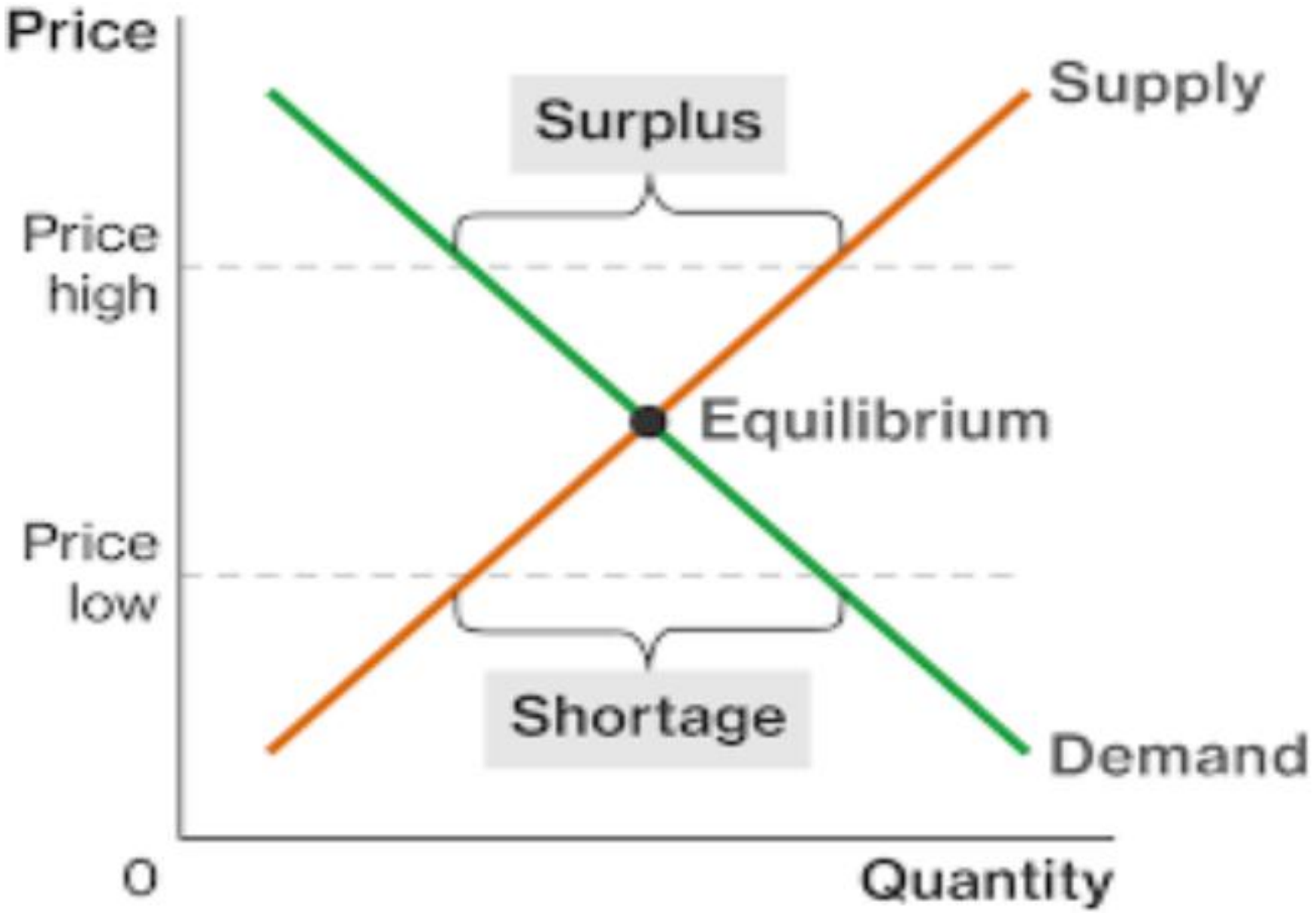
Price determination

Equilibrium (Demand and Supply)

Equilibrium price determination.



Price	Dd	Sl	Effect on price
10	0	40	Decrease (Above point "E")
8	10	30	Decrease (Above point E)
6	20	20	Equilibrium (at point E, intersection point of Dd & Sl)
4	30	10	Increase (Below point "E")
2	40	0	Increase (Below point "E")


Price
Supply
Surplus
Price high
Equilibrium
Price low
Shortage
Demand
0
Quantity

Restoring equilibrium price

- At any price other than P1 there will clearly be a tendency for change.
- **Excess supply**
- If Price is higher than P1, then supply will exceed demand.
- At price P2, there is an ***excess supply.***
- ■ ***As price falls*** consumers find the product more attractive than substitutes in consumption
- and some will switch away from those substitutes so that we move rightwardsalong the demand curve D (expansion of demand).
- ■ ***As price falls*** producers find the product less attractive than any substitutes in production and may switch resources to these alternatives so that we move leftwards
- along the supply curve (contraction of supply).

Excess demand

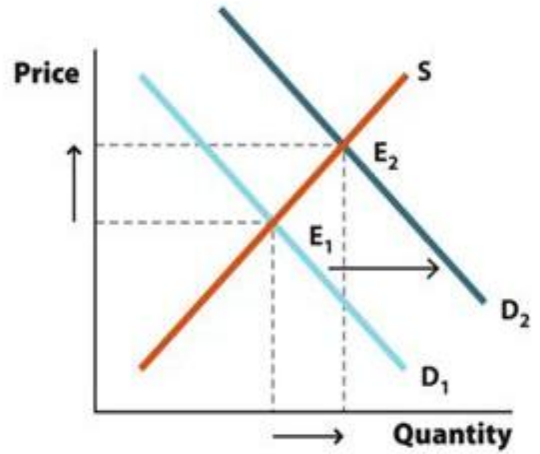
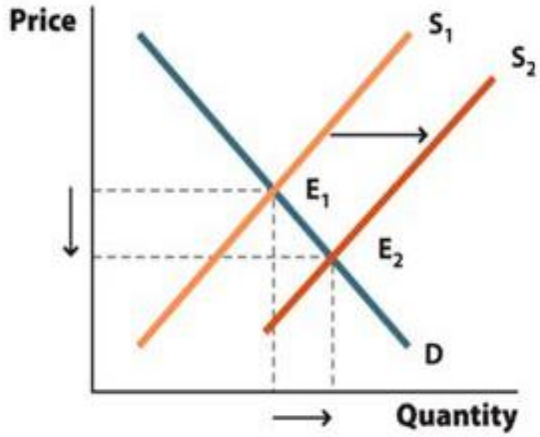
- If price is lower than P1, then demand exceeds supply.
- At price P3 there is an *excess demand*. In a free market excess demand will cause prices to be bid up, as at an auction, since there are more buyers than units of the product available.

■ ***As price rises***, consumers find the product less attractive than the substitutes in consumption and some will switch into those substitutes so that we move leftwards along the demand curve D (contraction of demand).

■ ***As price rises***, producers find the product more attractive than any substitutes in production and may switch resources to this product so that we move rightwards along the supply curve S (expansion of supply).

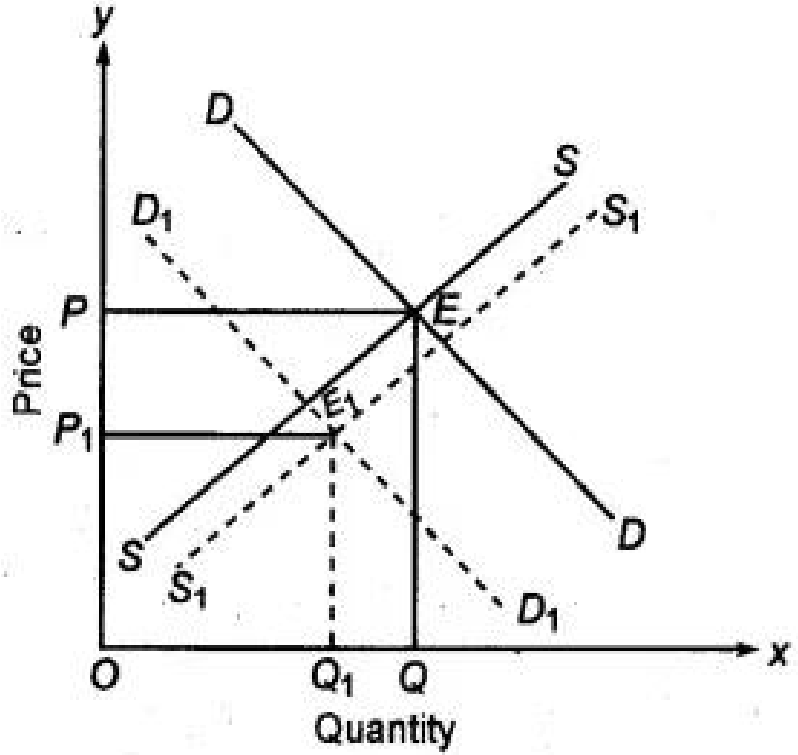
- Prices will continue to rise until we reach price P1

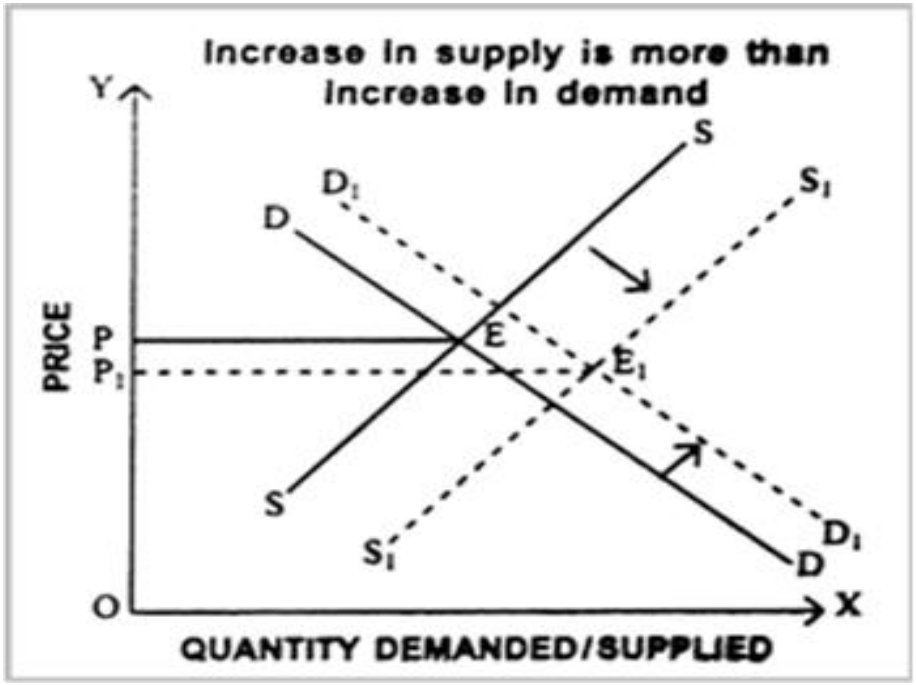
Change in Demand & Supply,effect on equilibrium price

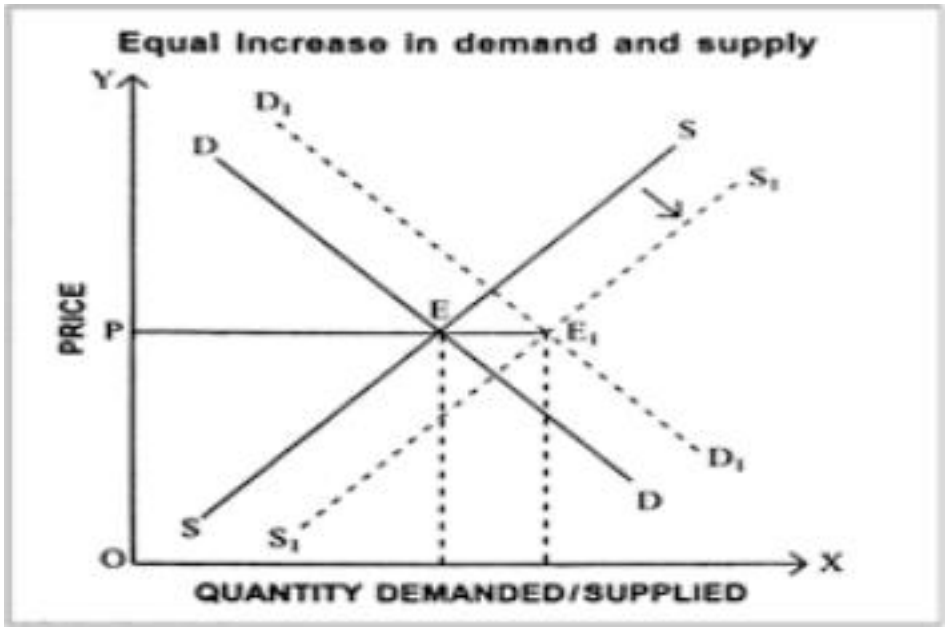
Change	Illustration	Impact on Price and Quantity
Demand increases		The demand curve shifts to the right. As a result, the equilibrium price and equilibrium quantity increase.
Supply increases		The supply curve shifts to the right. As a result, the equilibrium price declines and the equilibrium quantity increases.

Simultaneous Change in Dd & Sl

Increase in Demand is more than increase in supply







Simultaneous Change in Dd & Sl

Panel 1: Change in demand(Increase) is more than change in Supply(Increase).

Demand will change in the same direction with the change in price.

Panel 2: Change in demand(Increase) is less than change in Supply(Increase).

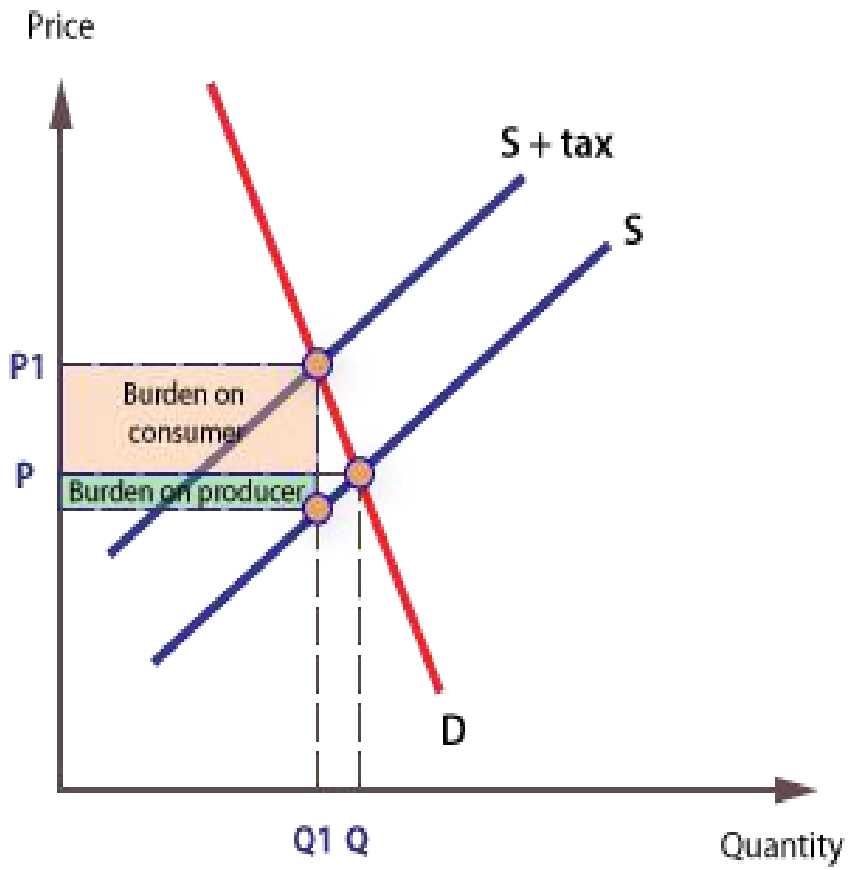
Demand will move in the opposit direction with the change in price.

Panel 3: Change in demand(Increase) is more than change in Supply(Increase)

There is no change in demand with the change in price.

Incedence of Tax

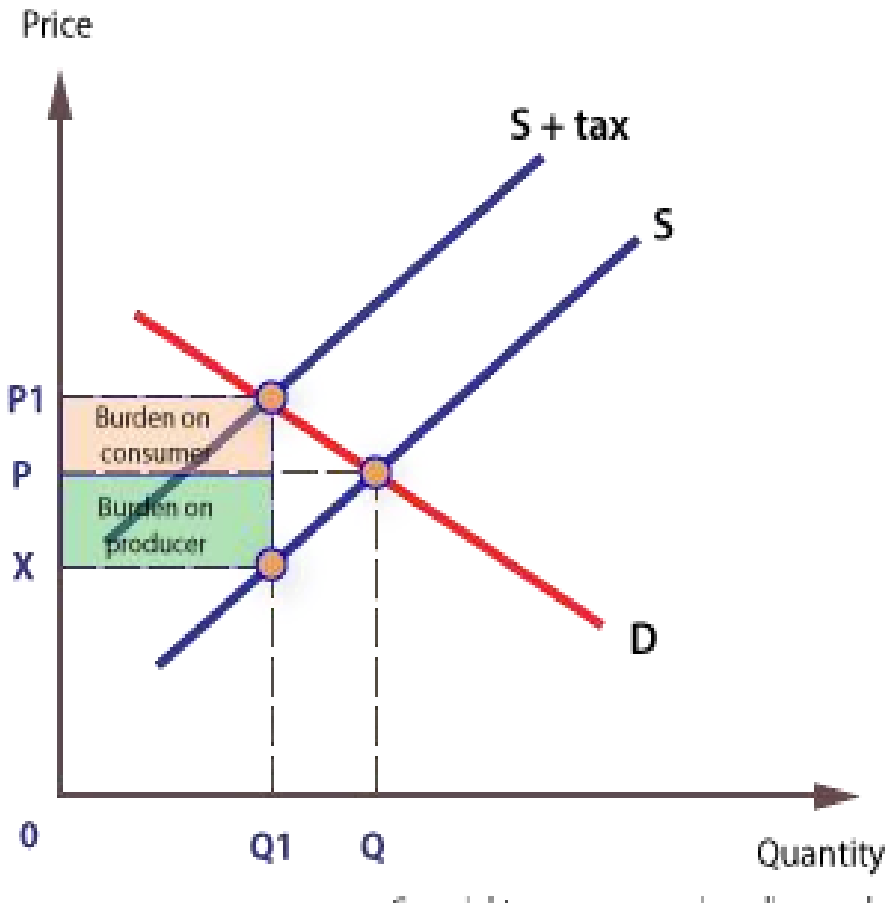
(Imposition of tax and its burden on consumer & producer)



- If demand is **inelastic** the tax burden will be **more on consumer** and less on producer.

  This is presented in the given diagram

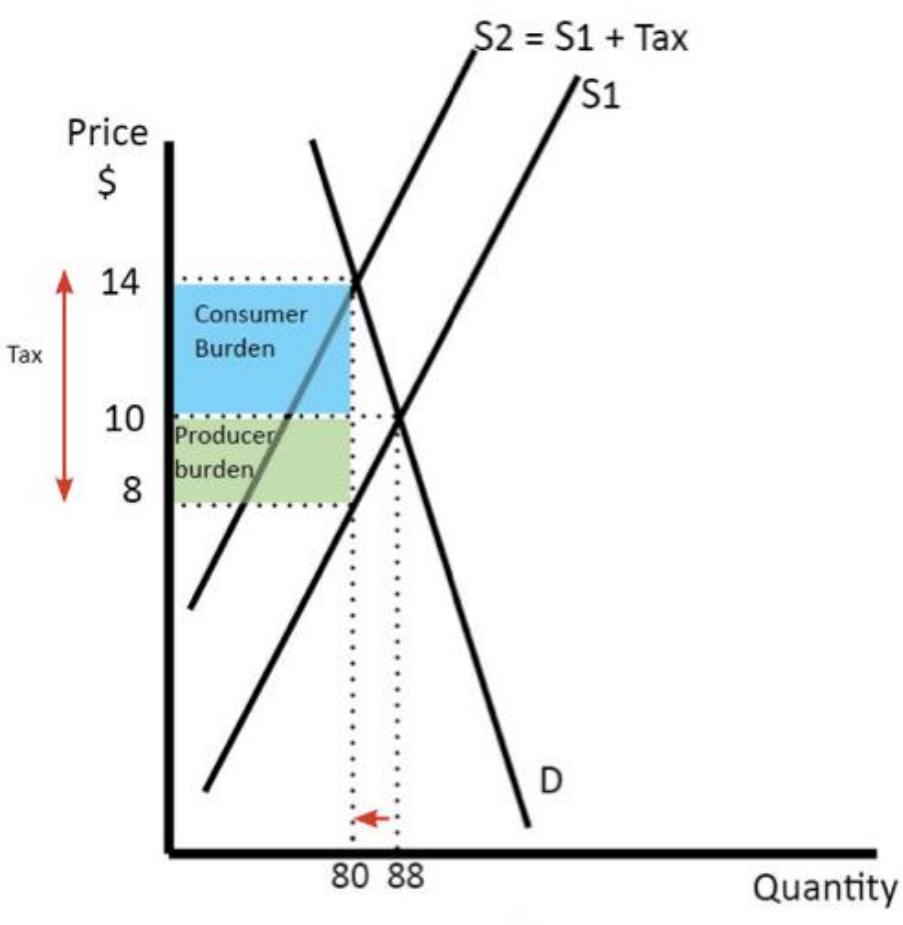
Incedence of Tax

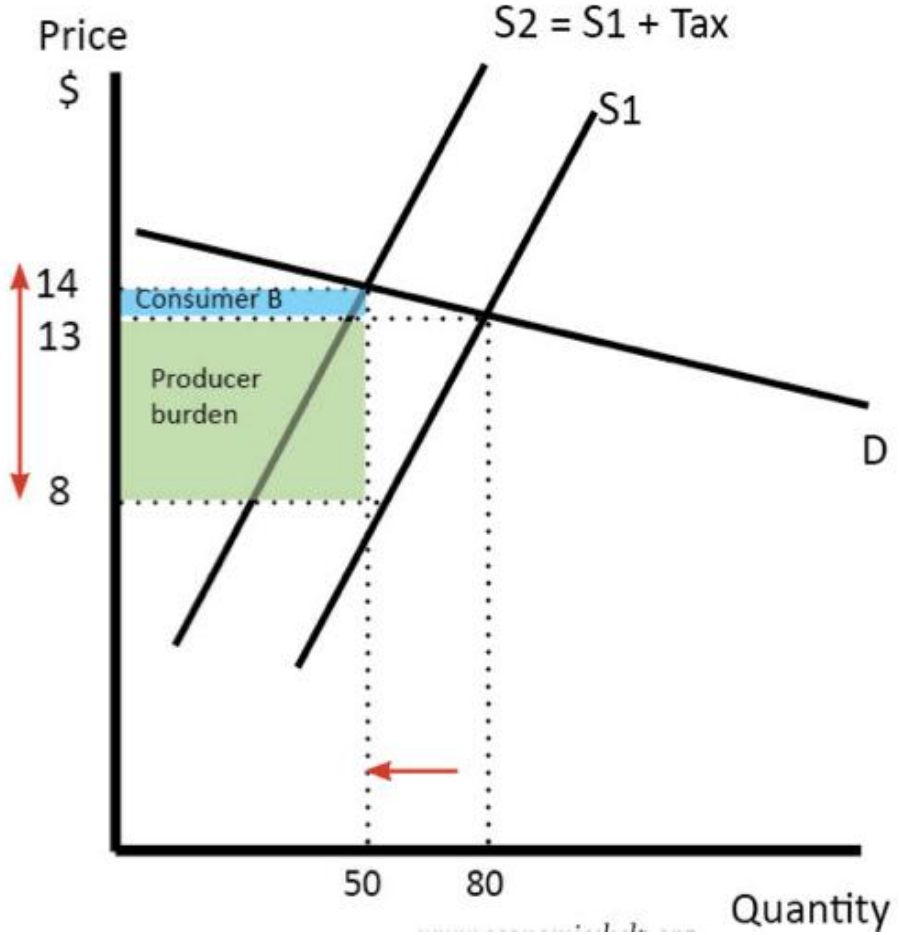


- If demand is **elastic** in nature the tax burden will be less on consumer and **more on producer.**

  This is presented in the given diagram

Another diagram 1st case Dd is inestic & 2nd case Dd is elastic.





Numerical Problems

- The demand and supply functions of cigarette in Delhi market are:

  D=5800 - 80P and S=1000 + 40P

(D and S are quantity demanded and quantity supplied respectively. P stands for price per pack of cigarette).

(i)Find the equilibrium price in the market.

(ii)If government imposes a GST(Goods and Services Tax) of ₹12, what will be its impact on the smokers? On the basis of your calculations indicate whether demand for cigarette is more or less elactic in nature?

- **Answer**: D=5800 - 80P and S=1000 + 40P

At equilibrium , P= ₹40 and Q= 2600 units

TR before price change= ₹104000

After a GST of ₹12 per unit, new supply S' = 1000 + 40(P-12)

So , the new price after tax =P'= 44 and the new quantity =Q'= 2280

TR after price change = ₹100320

So with increase in price, TR has fallen. So demand is more elastic.

Numerical Problems

Question: Given the following data:

WIDGETS P = 80 - Q (Demand)

P = 20 + 2Q (Supply)

Now suppliers must pay a tax of $6 per unit. Find the new equilibrium price-inclusive price and quantity.

Answer: Now suppliers do not get the full price when they make a sale — they get $6 less. This changes our supply curve to P - 6 = 20 + 2Q (Supply)

P = 26 + 2Q (Supply)

To find the equilibrium price, set the demand and supply equations equal to each other:

80 - Q = 26 + 2Q

54 = 3Q

Q = 18

Thus, our equilibrium quantity is 18. To find our equilibrium (tax inclusive) price, we substitute our equilibrium quantity into one of our equations. I'll substitute it into our demand equation:

P = 80 - Q

P = 80 - 18

P = 62

Thus the equilibrium quantity is 18, the equilibrium price (with tax) is $62, and the equilibrium price without tax is $56 (62-6).