

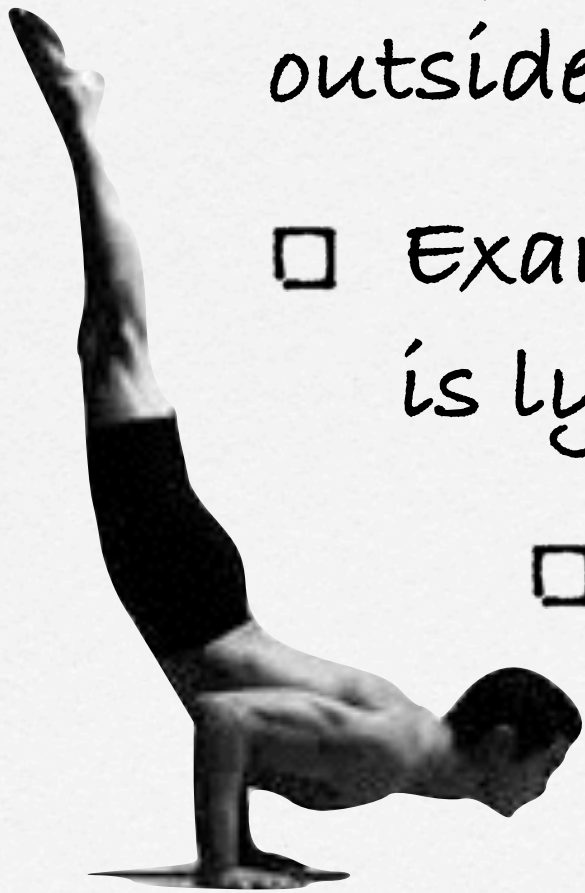
# Market Equilibrium, the Price Mechanism and Market Efficiency

Chapter 3



# Equilibrium

- Equilibrium is defined as a "state of rest, self-perpetuating in the absence of any outside disturbance".
- Example: a book is in equilibrium if it is lying on a desk.
- If someone moves it, then it is in disequilibrium until it is put down somewhere else

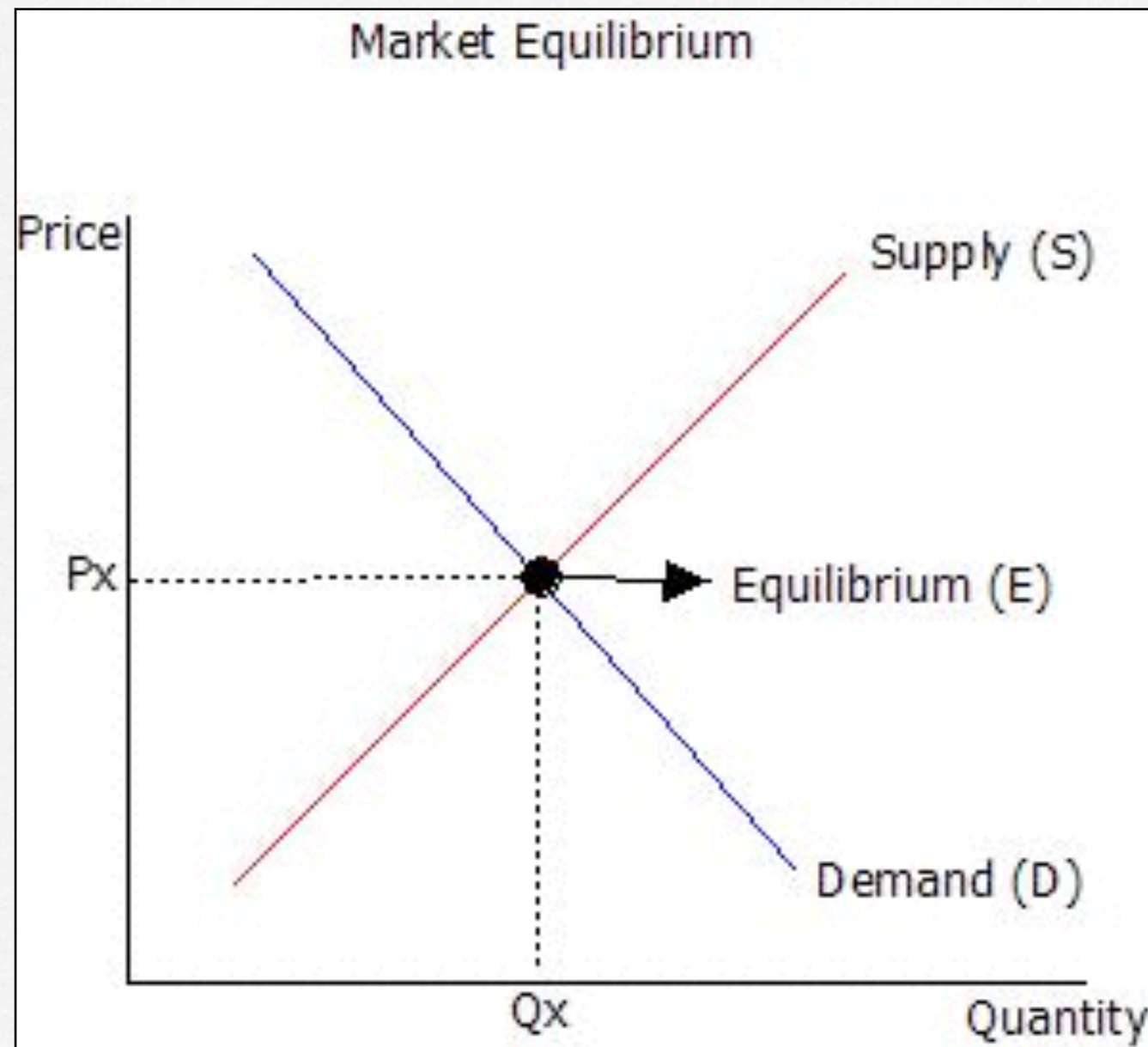




# Equilibrium

- Economists spend lots of time studying situations where equilibria change and why those changes take place
- Use this information to predict changes and formulate economic policy

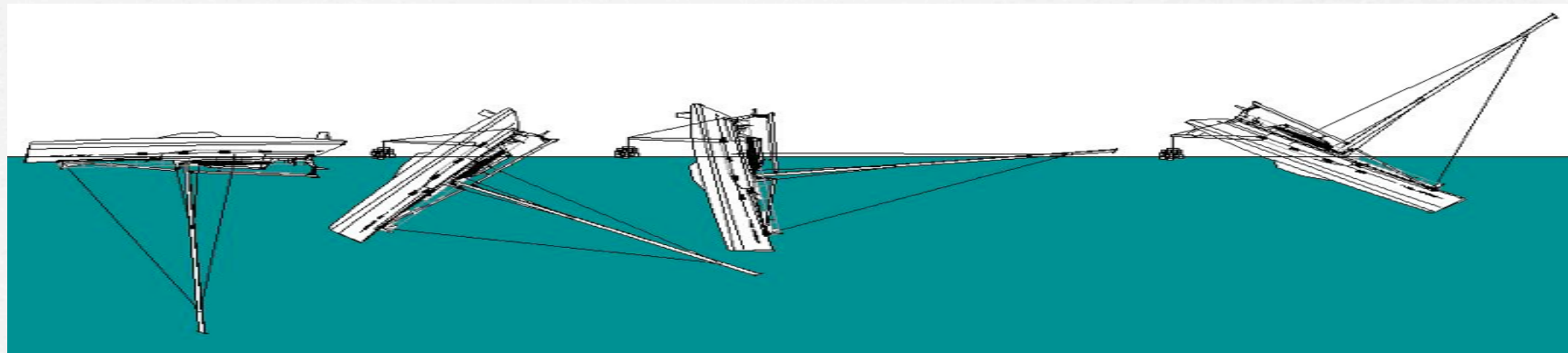
# Equilibrium





# Equilibrium

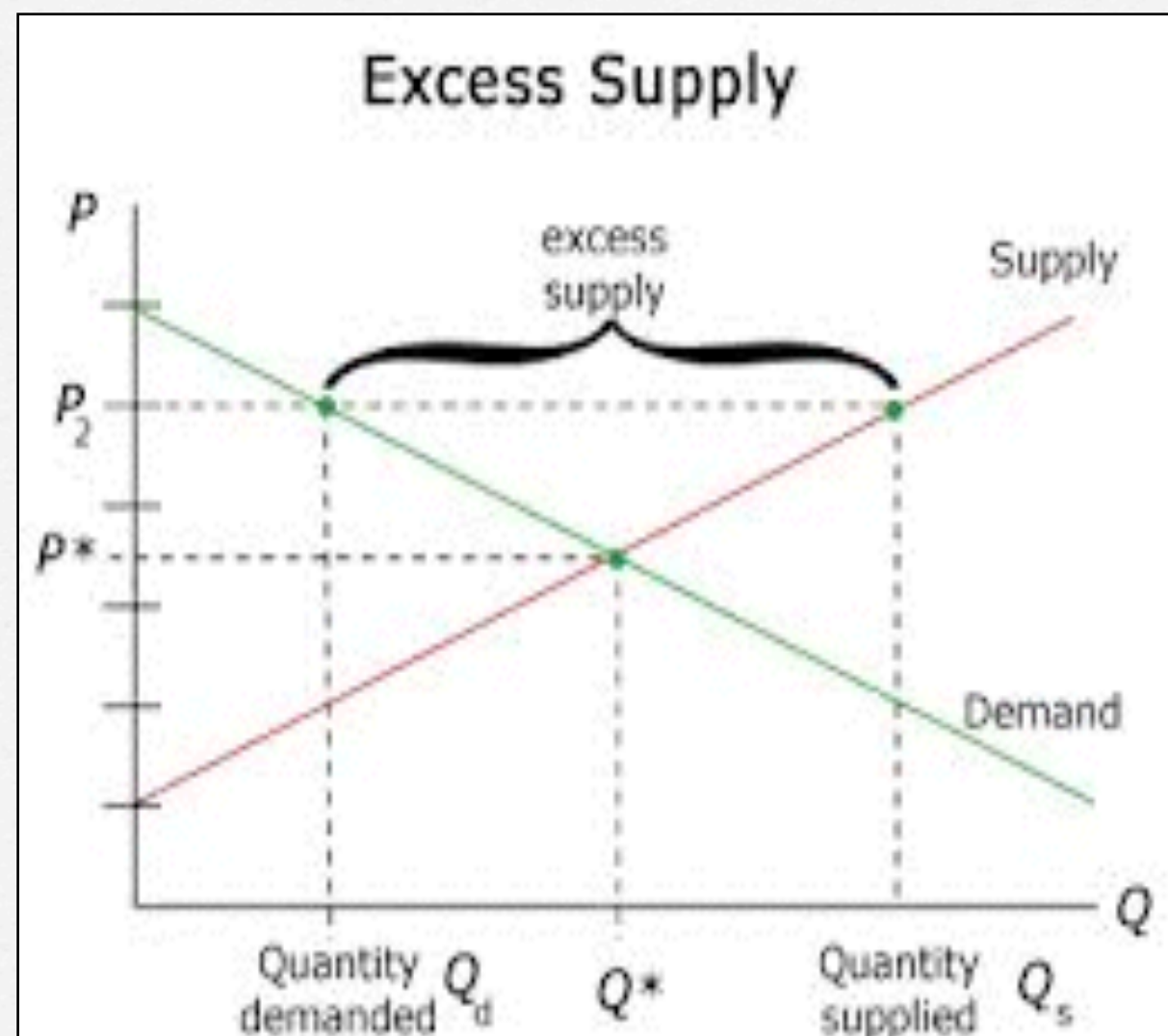
- ❑ The market is in equilibrium, since it will stay like this, in each time period, until there is an "outside disturbance" to change equilibrium.
- ❑ The equilibrium is "self-righting" in that if you try to move away from it (without an outside disturbance) it will return to the original position.





# Equilibrium

- Producers can try to raise or lower the equilibrium price.
- If producers raise the price, quantity demanded will fall
- Now we have an excess supply (more quantity supplied than demanded at the higher price) = Surplus

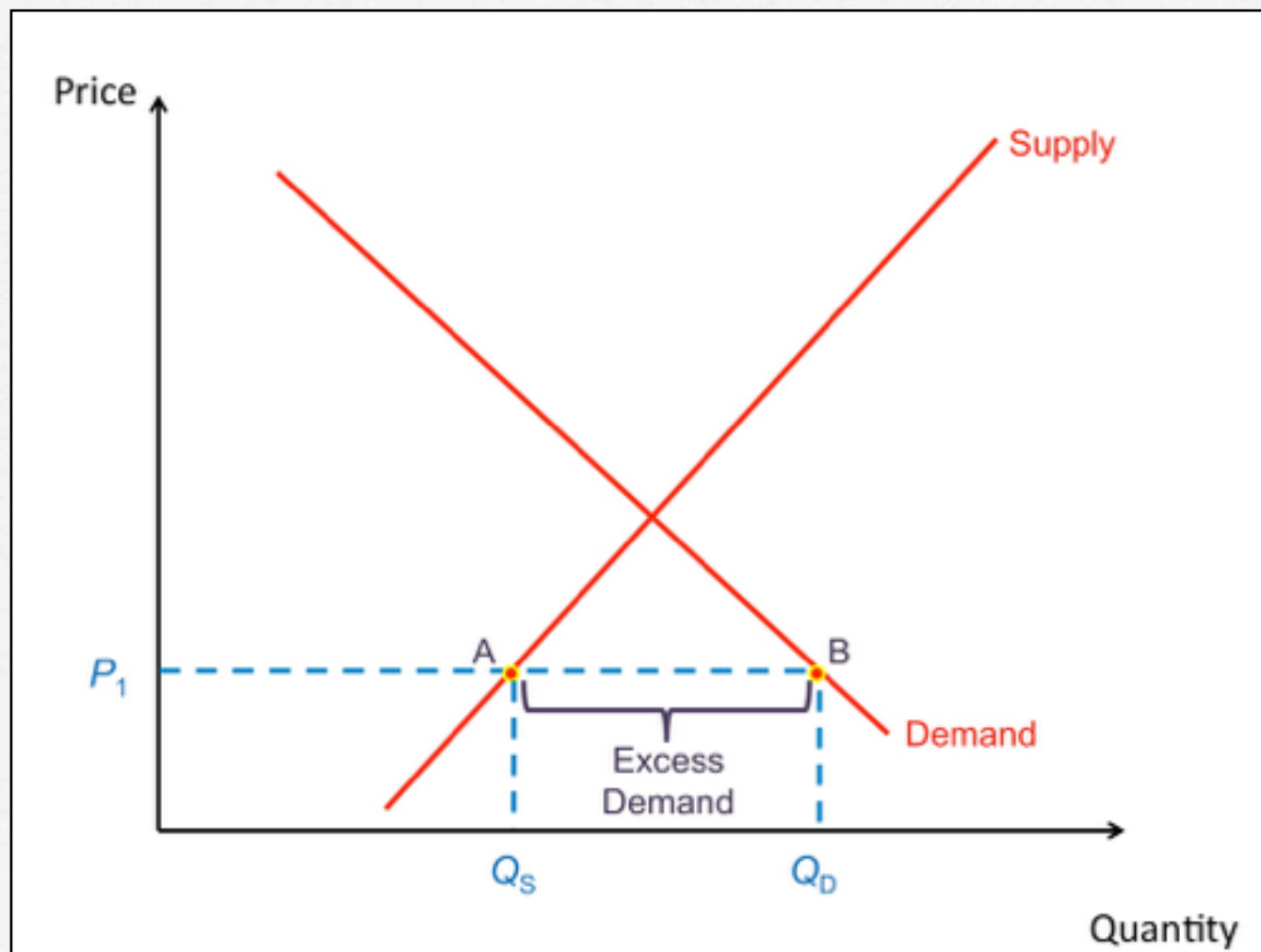




# Equilibrium

- In order to eliminate a surplus, producers must lower their prices.
- As they lower their prices, quantity demanded will increase and the quantity supplied will fall.
- This process continues until the quantity demanded equals quantity supplied
- This will be back at equilibrium price so the situation is self-righting if price is raised for no external reason.

# Equilibrium



- Producers can try to lower the price.
- At this price, the quantity demanded will rise and the quantity producers supply falls.
- Now have excess demand (more is being demanded than supplied at the lower price) = Shortage

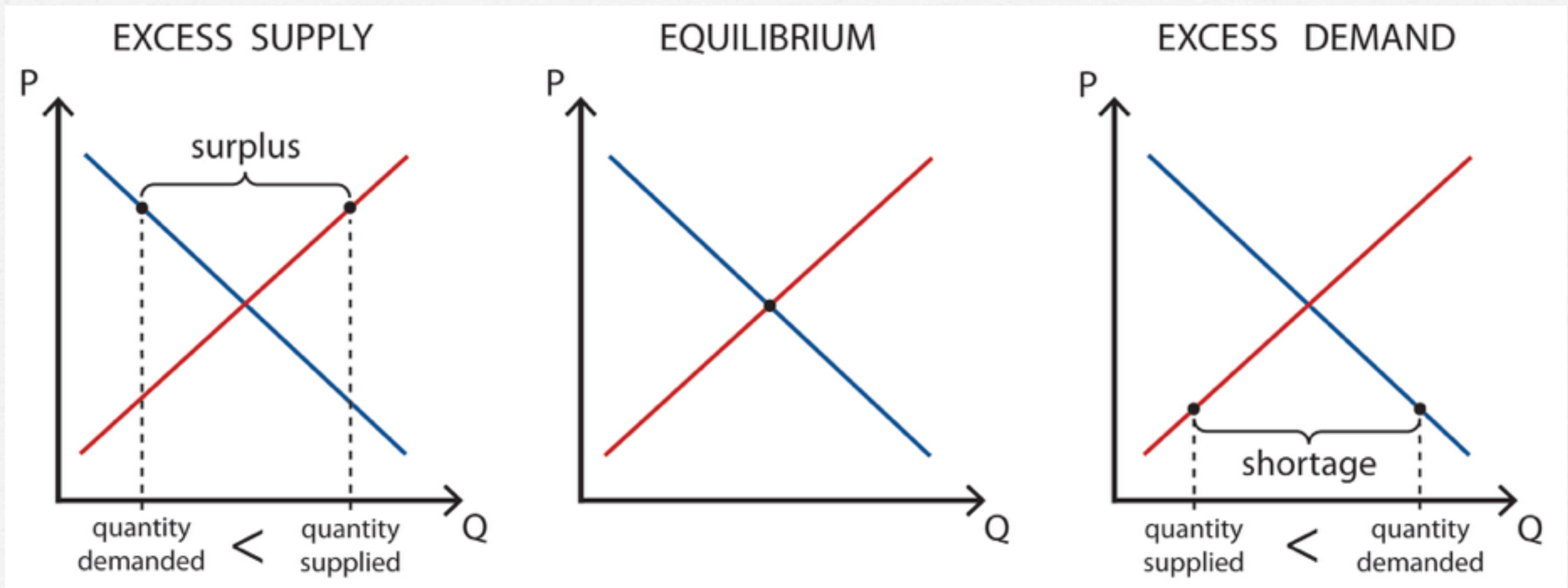


# Equilibrium

- In order to eliminate a shortage, producers must raise their prices.
- As they raise their prices, quantity demanded will decrease and the quantity supplied will increase.
- This process continues until the quantity demanded equals quantity supplied
- This will be back at equilibrium price so the situation is self-righting.



# Equilibrium





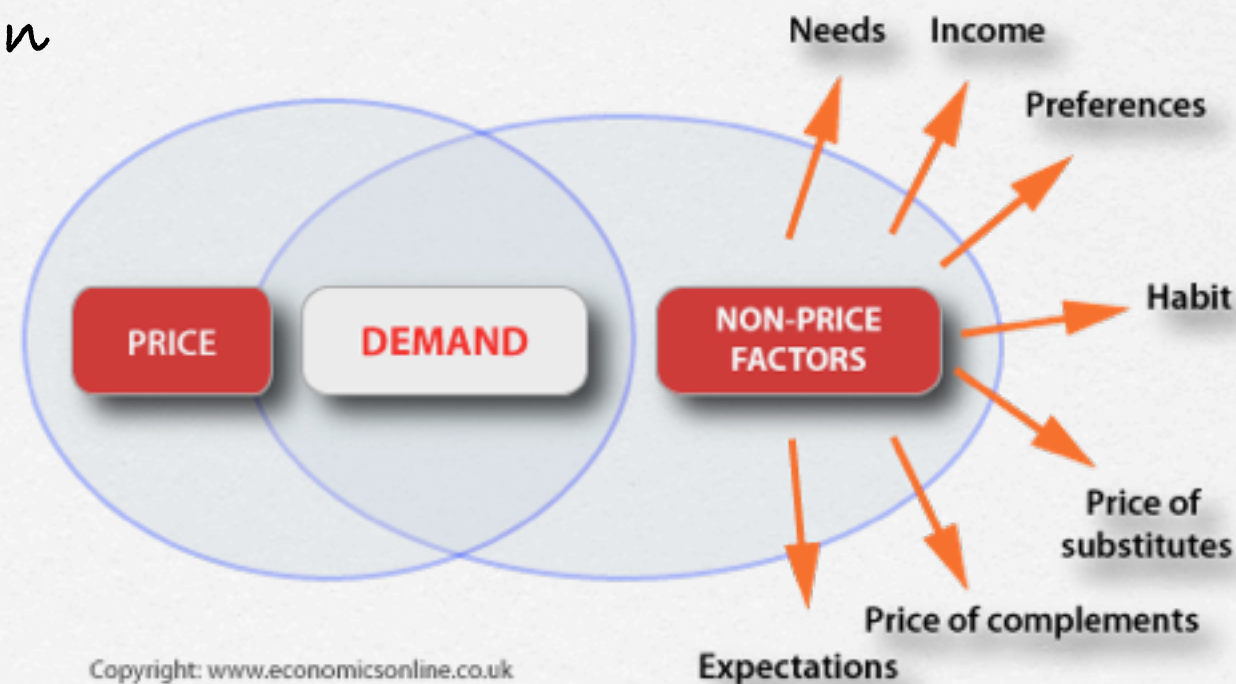
# Changes in Demand and Supply Effect Upon Equilibrium

- The equilibrium may be moved by any "outside disturbance".
- In supply and demand, this change would be in one of the determinants (factors) of demand or supply other than the price of the product.
- Leads to a shift in either the supply or demand curve



# Determinants of Demand

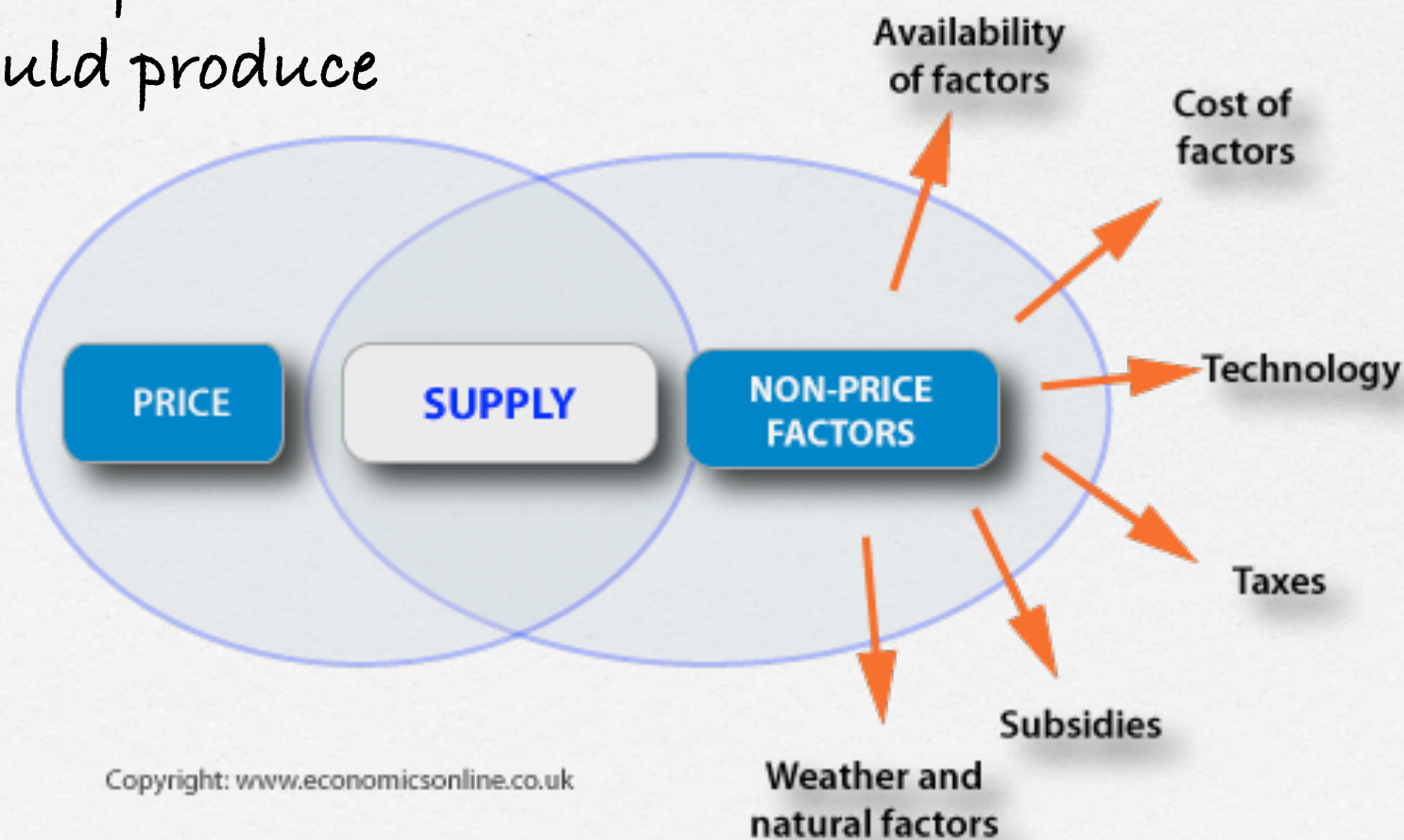
- ❑ Income (normal goods and inferior goods)
- ❑ Price of other goods (substitutes, complements)
- ❑ Tastes and preferences
- ❑ Size of population
- ❑ Age structure of population
- ❑ Changes in income distribution
- ❑ Government policy changes
- ❑ Seasonal changes





# Determinants of Supply

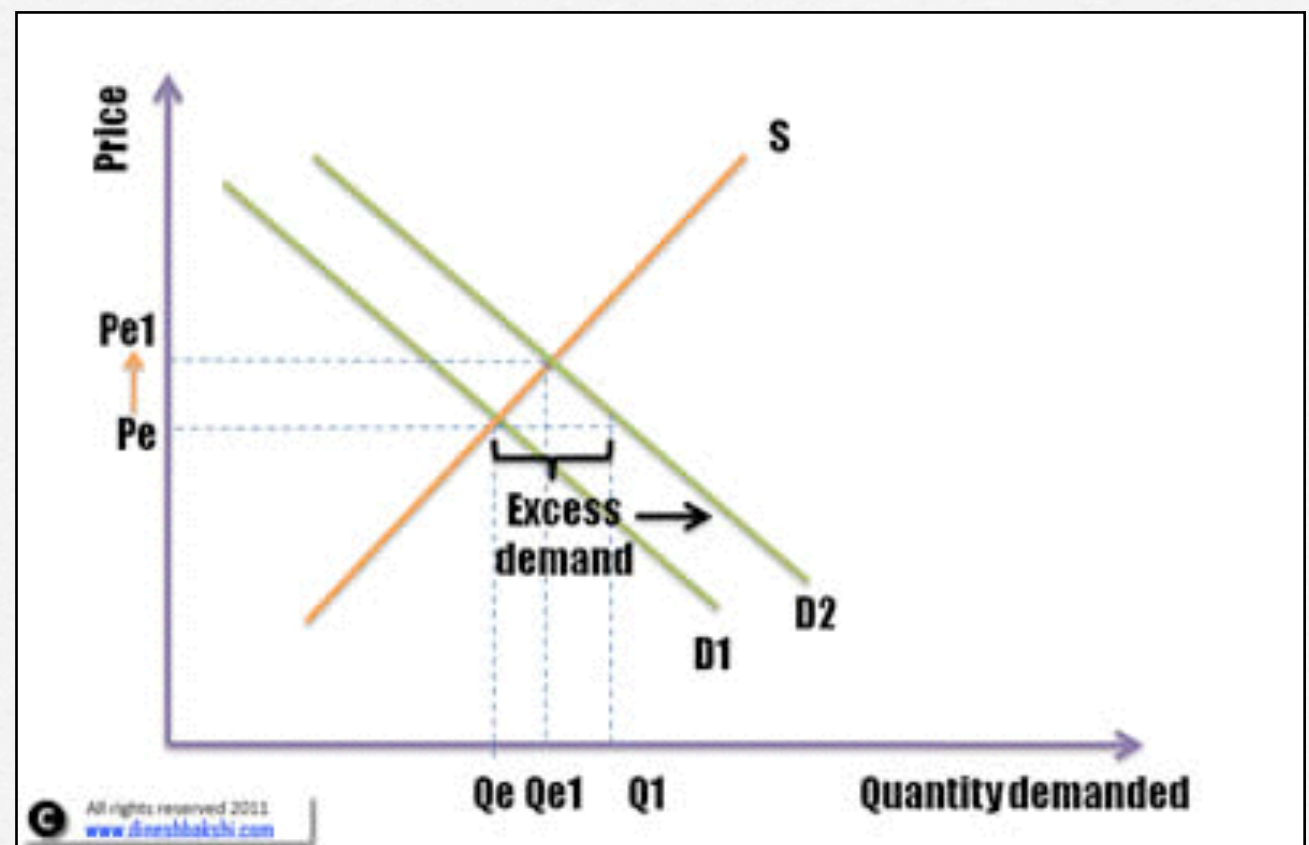
- ❑ Costs of factors of production (land, labor, capital and management)
- ❑ Prices of other products the producer could produce instead
- ❑ Technology
- ❑ Expectations
- ❑ Government intervention





# Changes in Demand and Supply Effect Upon Equilibrium

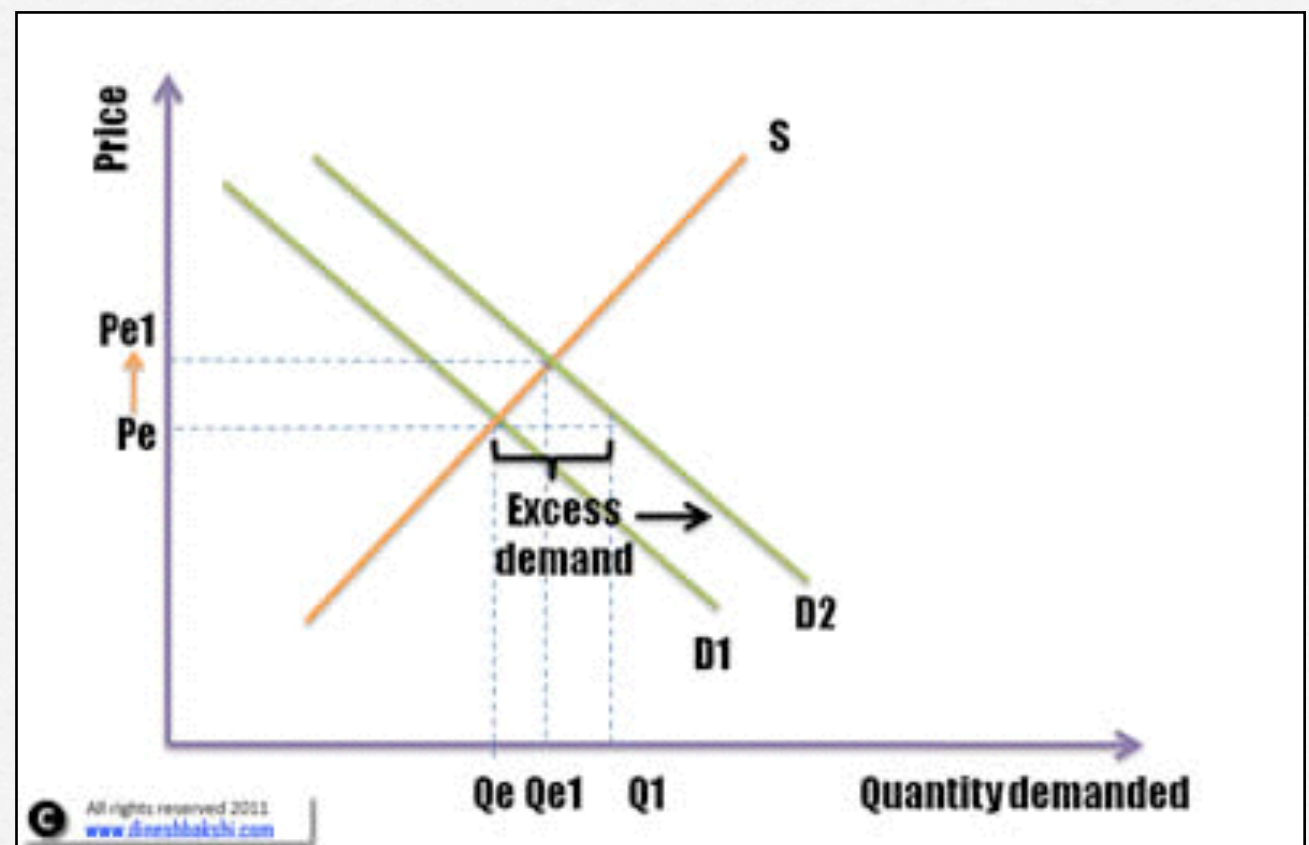
- Example: There is an increase in income for consumers of foreign holidays (normal good)
  - When income increases, then there will be an increase in the demand for holidays and the demand curve for holidays will shift to the right





# Changes in Demand and Supply Effect Upon Equilibrium

- When the demand curve shifts from  $D_1$  to  $D_2$ , price initially remains at  $P_e$  so we find that  $Q_e$  continues to be supplied but now demand increases to  $Q_1$
- This means that at the old equilibrium price, there is excess demand
- To eliminate excess demand, producers raise prices until quantity demanded equals quantity supplied





# Changes in Demand and Supply Effect Upon Equilibrium

- Whenever there is a shift in the demand or supply curve, if left to act alone, will adjust to a new equilibrium, market clearing price.



# The Role of Price Mechanism

- Forces of supply and demand (known as "price mechanism") move markets toward equilibrium.
- Price mechanisms also help allocate scarce resources
  - Resources are allocated and reallocated in response to change in price



we assume that producers are rational (want to maximize profit), a higher price will give producers an incentive to produce more of a good (law of supply)



# The Role of Price Mechanism

- ❑ Producers will allocate more resources towards producing a good whose demand is highest (profit for producers)
- ❑ There is no central planning agency that specifically tells producers to produce more of a good
- ❑ Increase in price consumers are willing to pay acts as a signal to producers to increase production





# The Role of Price Mechanism

- Role of price mechanism is an example of Adam Smith's "Invisible hand" in the economy by moving the factors of production around to produce the goods and services wanted by buyers in the community.



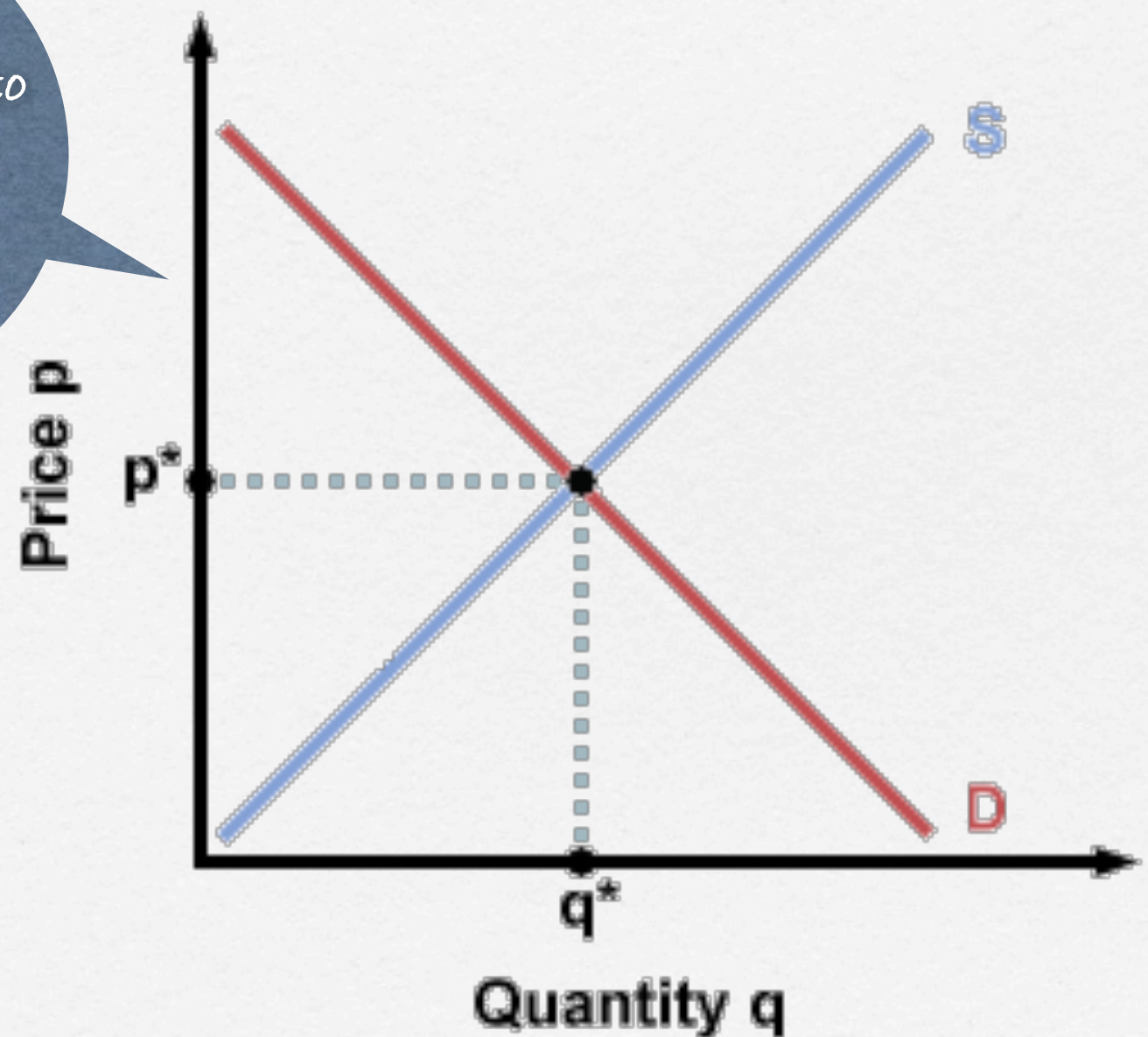


# Market Efficiency: Consumer and Producer Surplus

□  $p^*$  is the equilibrium price

□  $q^*$  is the equilibrium quantity

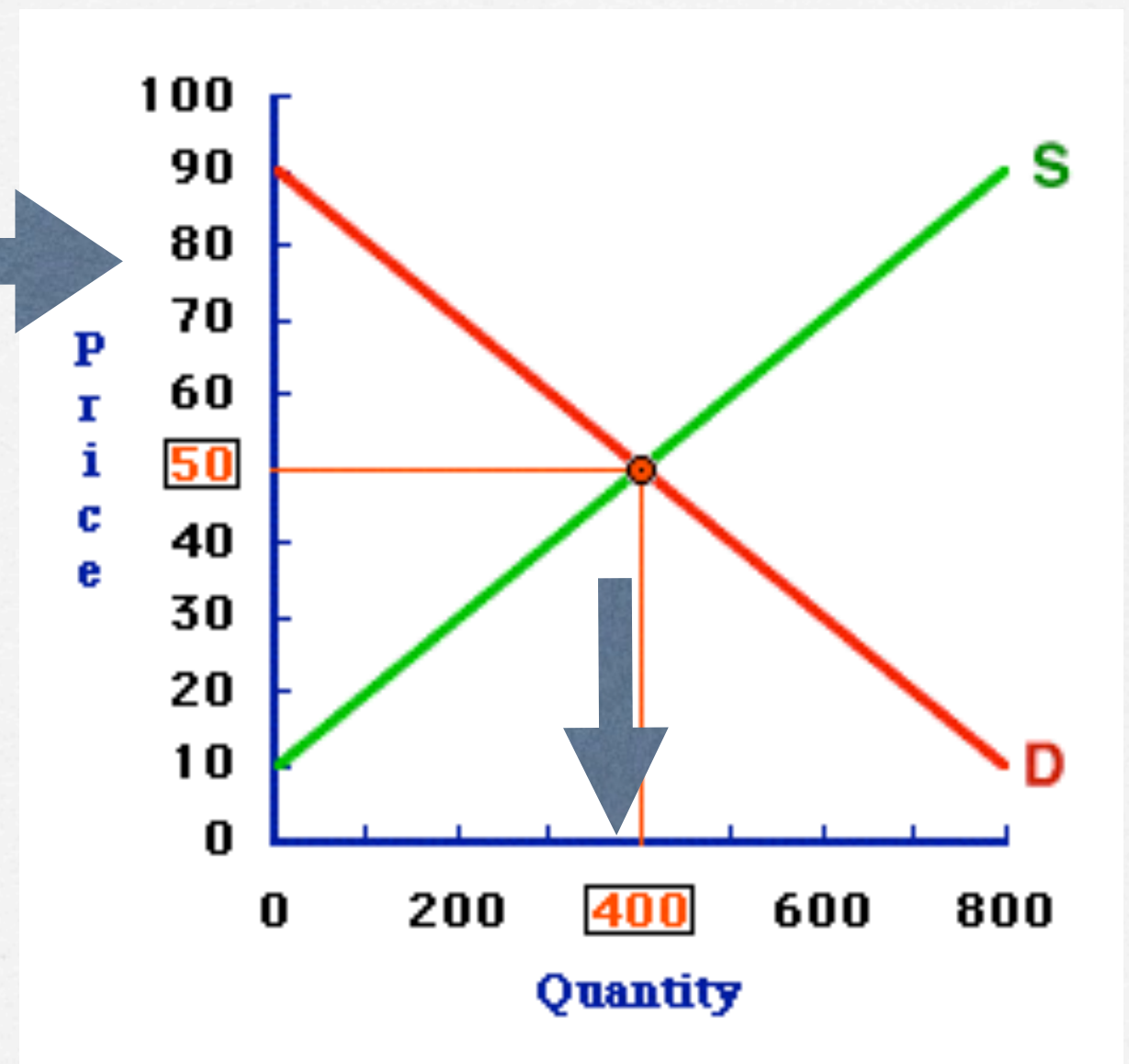
Are some people willing to pay above the equilibrium price?





# Market Efficiency: Consumer Surplus

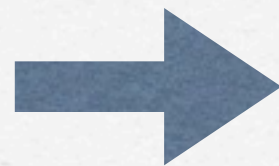
- People are willing to pay above the  $P$  (equilibrium price) as shown by the demand curve.
- For example, at a price of \$70, the quantity demanded is 200.
- However, consumers do not have to pay \$70, they can just pay the equilibrium price of \$50.
- This means that all of the consumers who purchase the first 399 items have made a gain. They have paid the price below the price they were prepared to pay



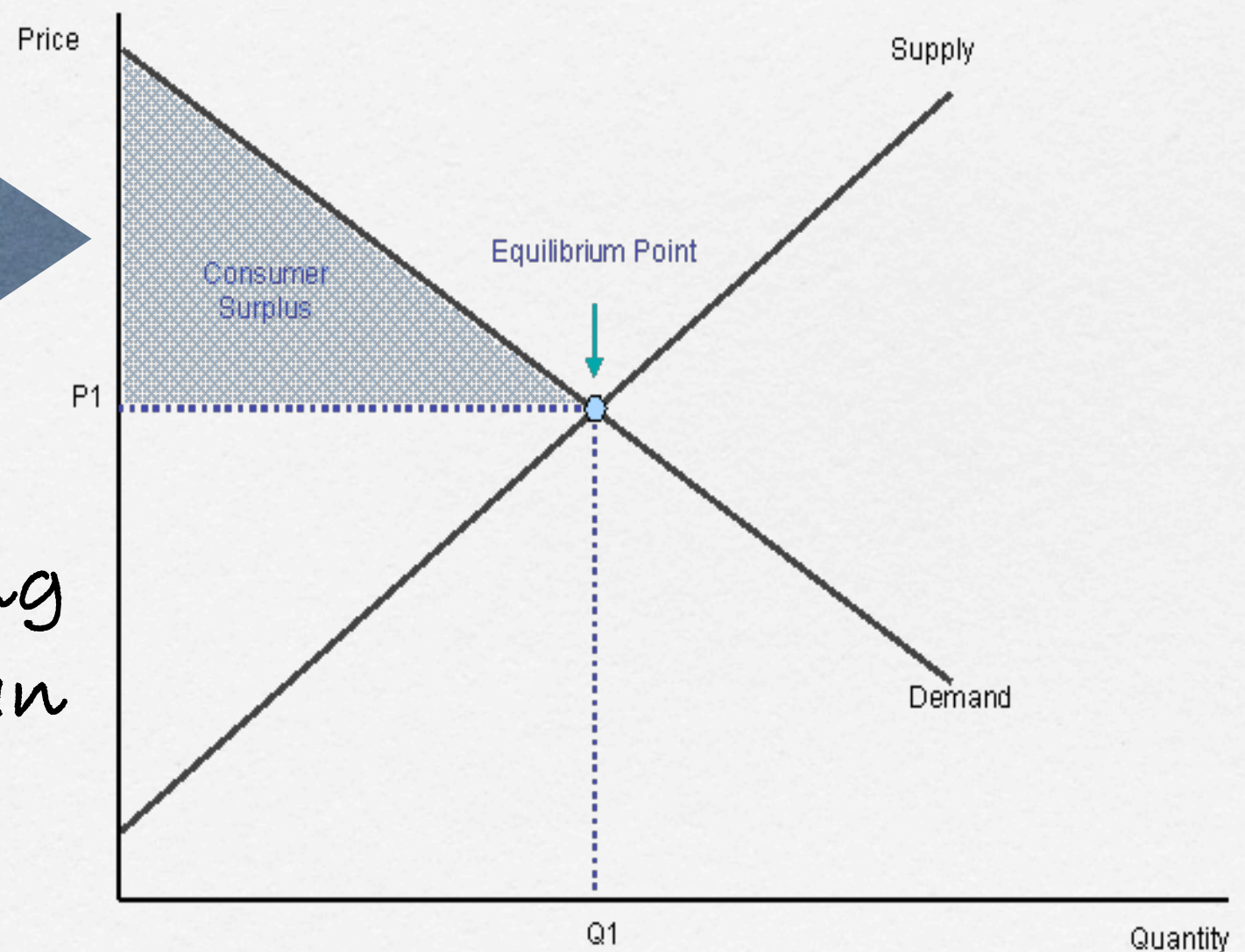


# Market Efficiency: Consumer Surplus

- This illustrates the concept of consumer surplus
- This is extra satisfaction (or utility) gained by consumers from paying a price that is lower than that which they were prepared to pay



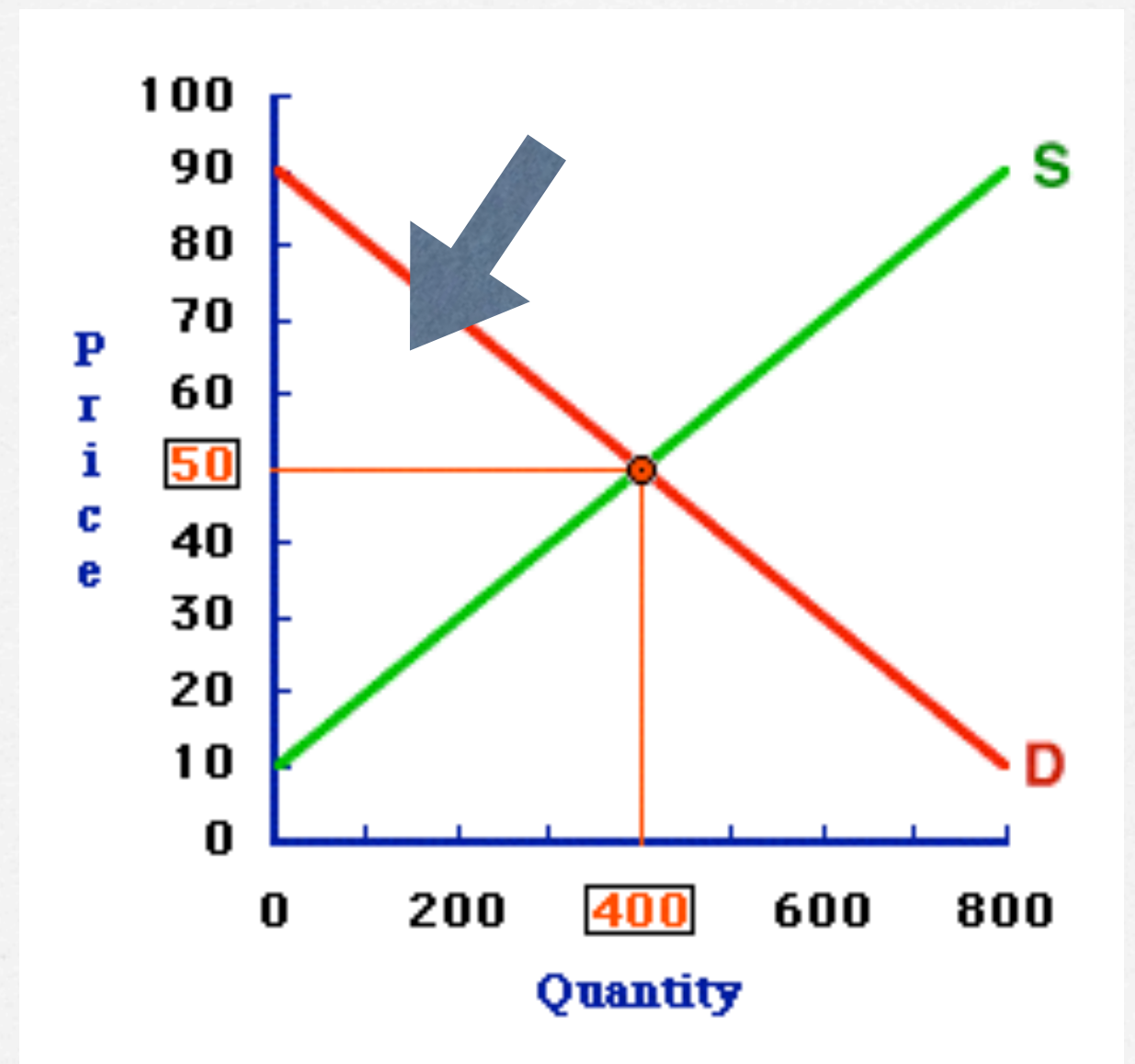
Consumer surplus is the difference between the price that a consumer is prepared to pay and the actual price paid





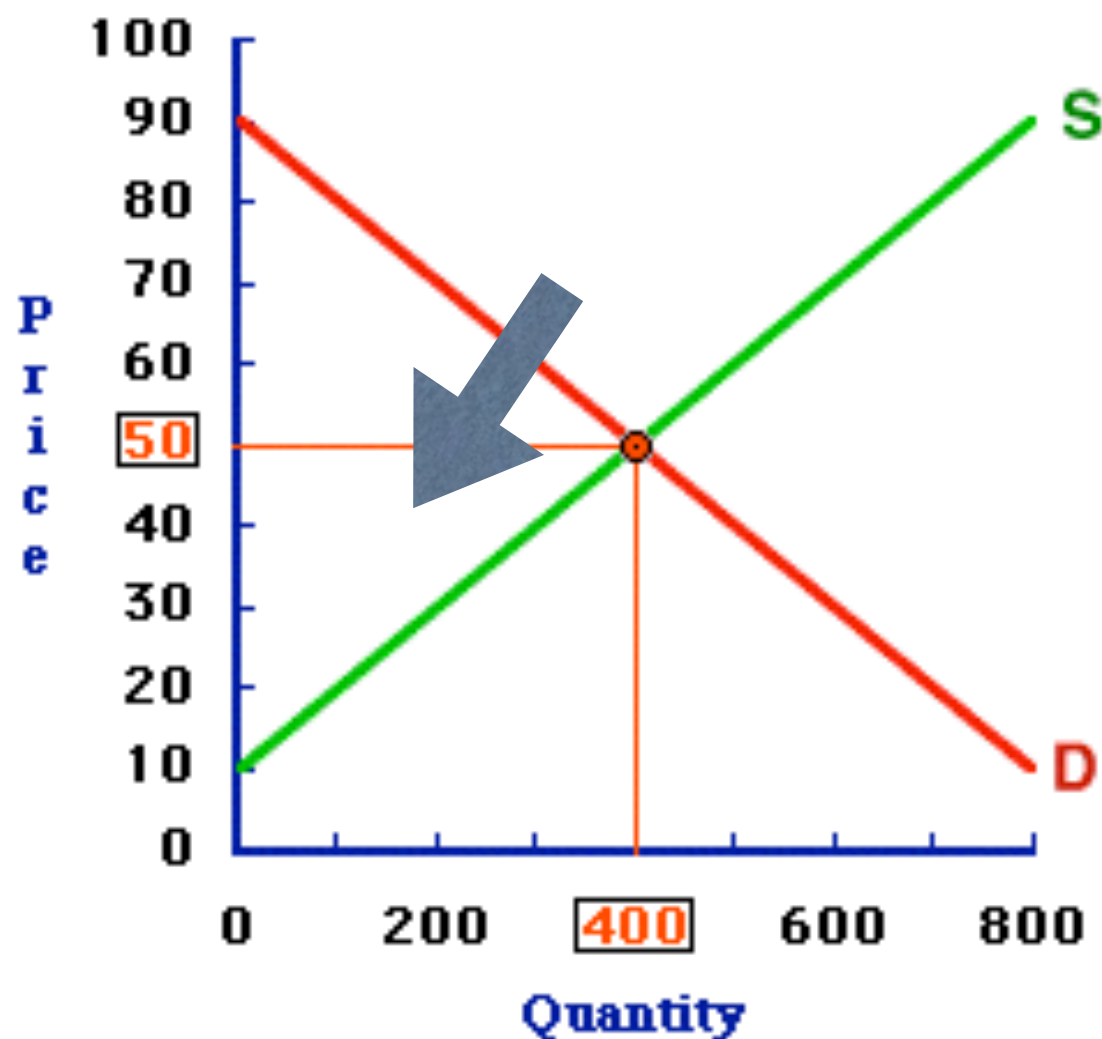
# Market Efficiency: Consumer Surplus

- In this case, one consumer was willing to pay as much as \$89 for a product, but since they only have to pay \$50, they are gaining.
- The total consumer surplus is shown by the area under the demand curve and above the equilibrium price





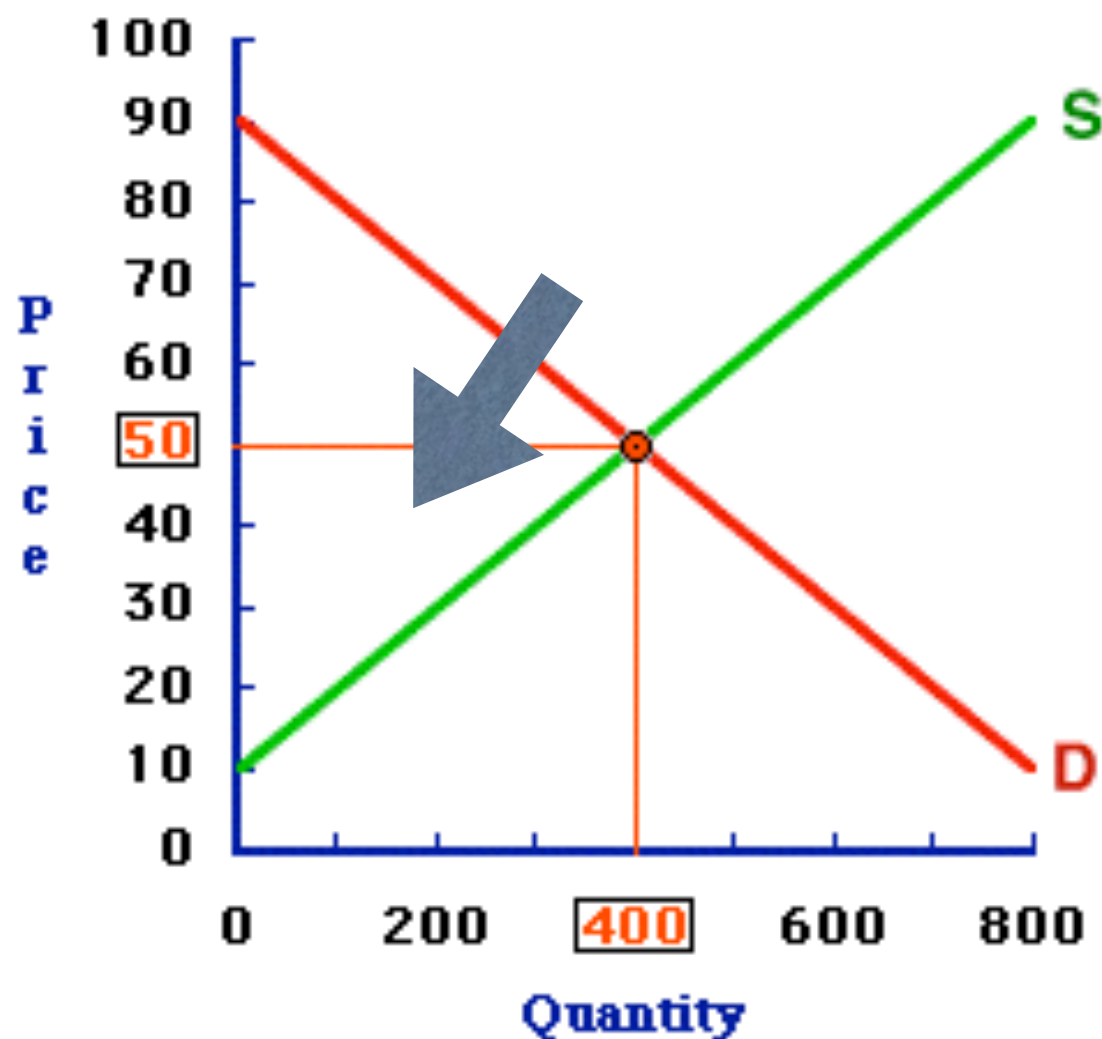
# Market Efficiency: Producer Surplus



- Also, at the equilibrium point, some production of a product would take place at a price lower than \$50
- This is shown by the supply curve.



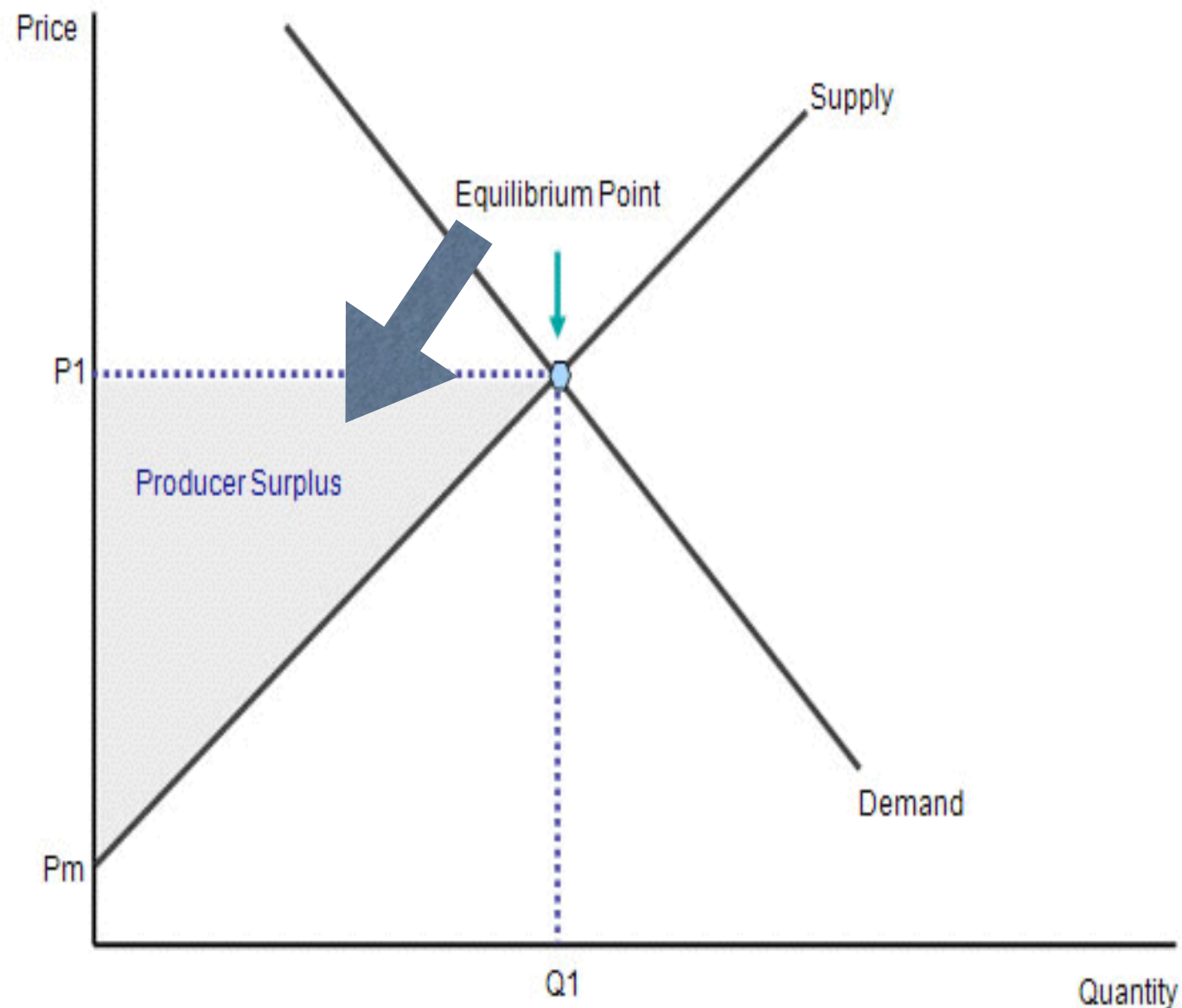
# Market Efficiency: Producer Surplus



- For example, at a price \$30, there would still be 200 products supplied. At a price of \$20, there would still be 100 products supplied.
- However, the producer does not have to sell their product at \$20 or \$30, they can sell their product at equilibrium price of \$50.
- The producer will have received a higher price than the one she was prepared to accept.



# Market Efficiency: Producer Surplus

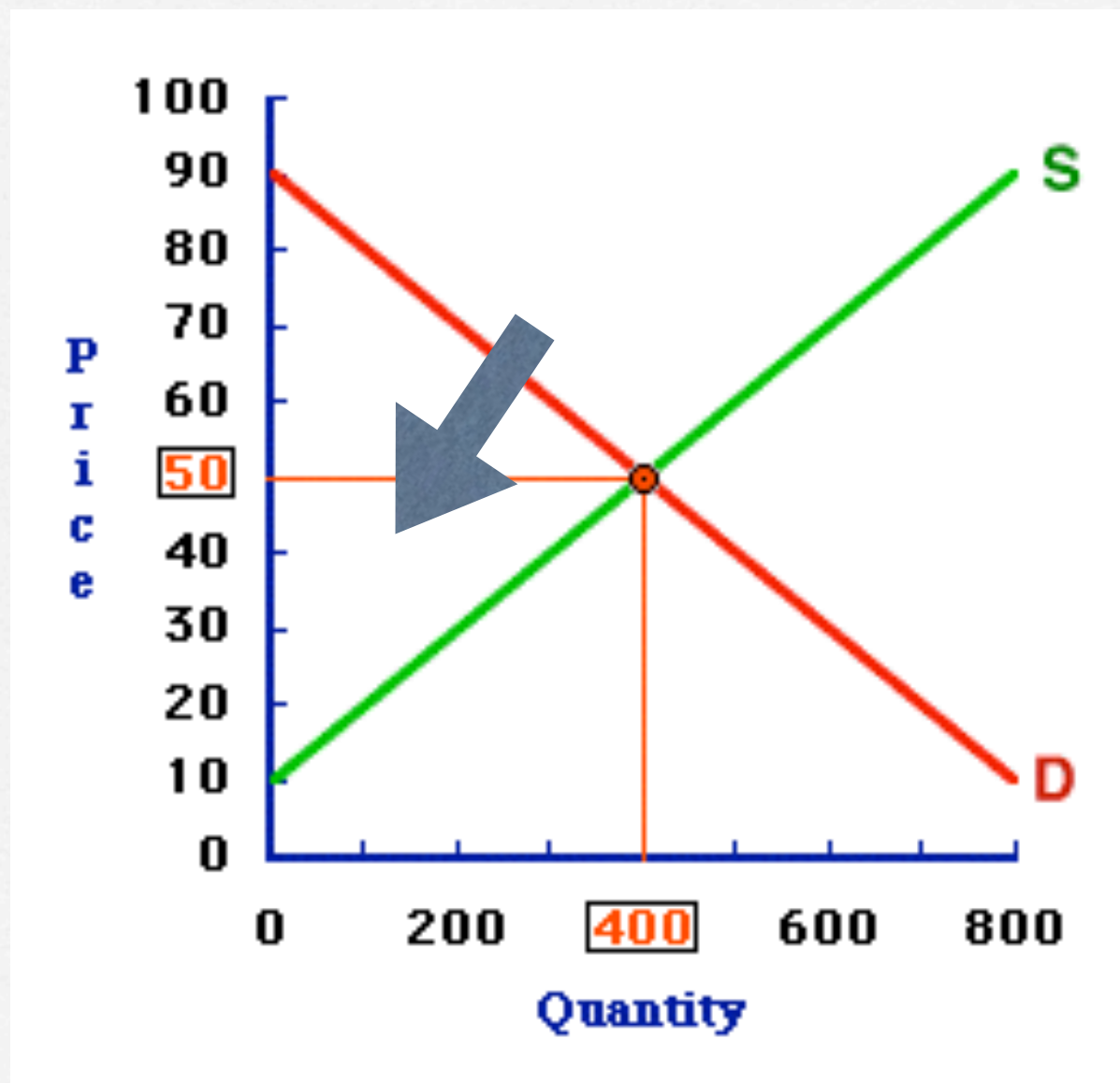


This illustrates the concept of producer surplus.

Producer surplus is the excess of actual earning that a producer makes from a given quantity of output, over and above the amount the producer would be prepared to accept for that output.



# Market Efficiency: Producer Surplus

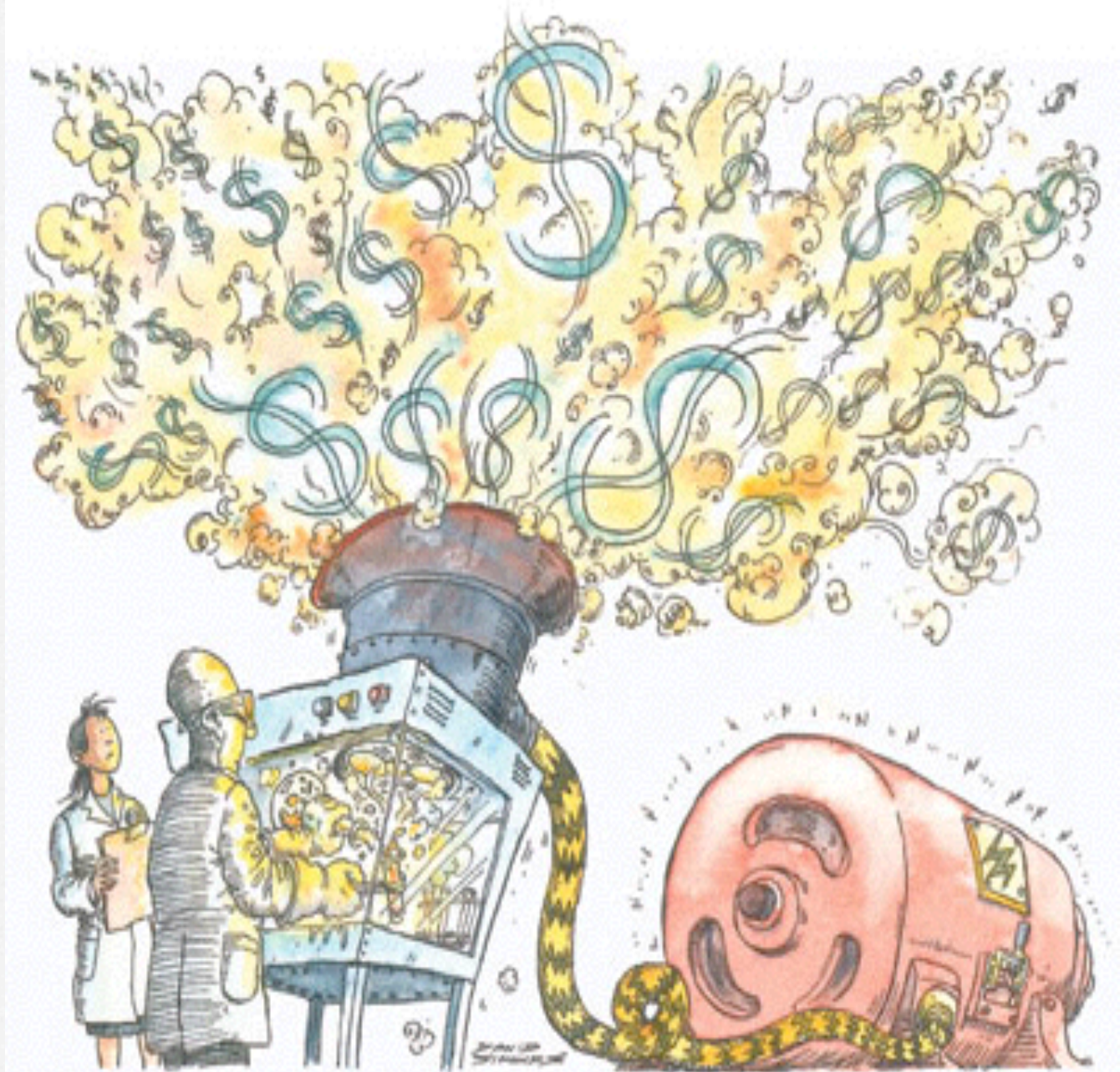


- In this case, the producer was willing to supply a product for as little as \$8 for each ( $400/\$50 = \$8/\text{product}$ ), but receives \$50 per product. The producer is gaining.
- The total producer surplus is shown by the area under the equilibrium price and above the supply curve.



# Allocative Efficiency

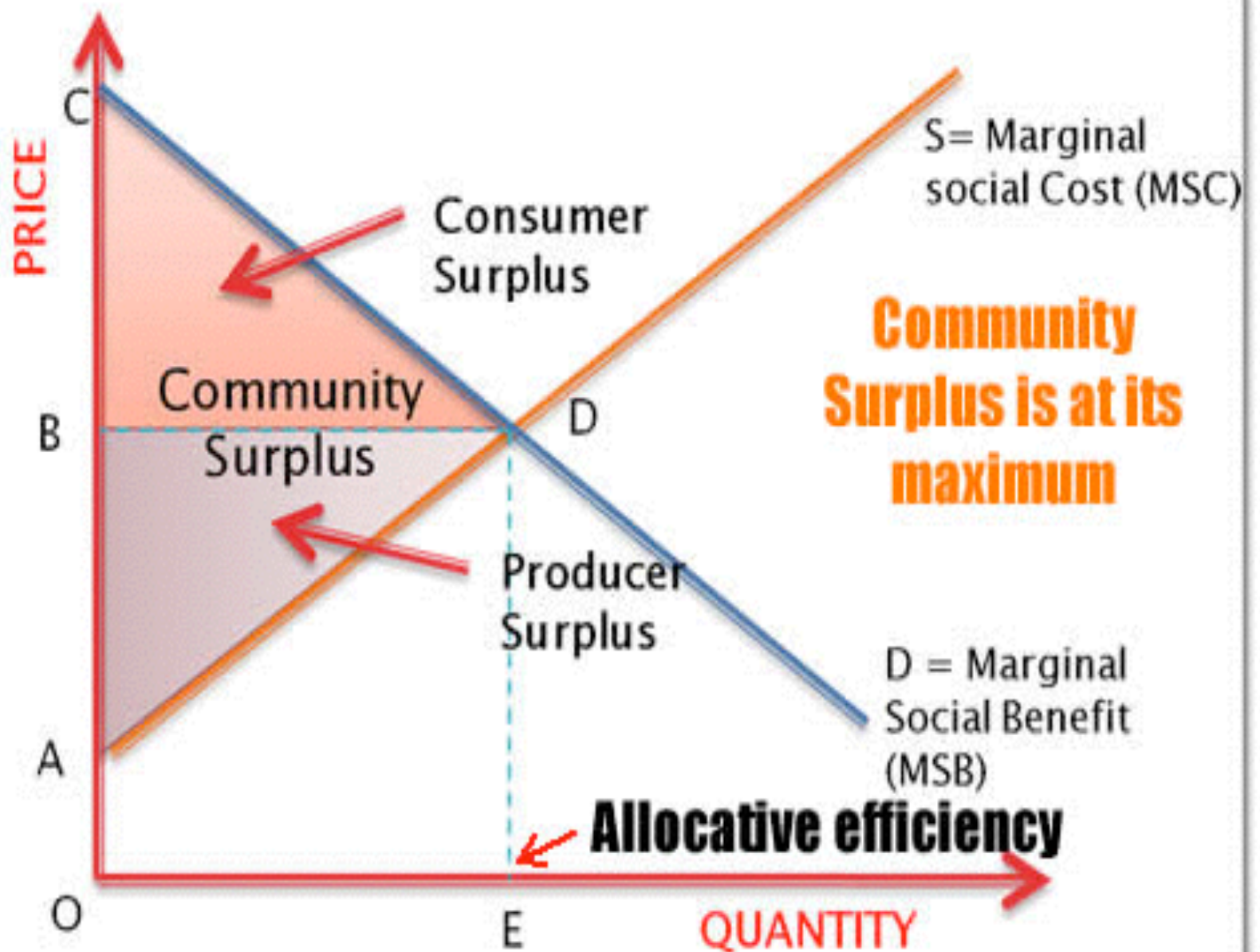
- When a market is in equilibrium (with no external influences and no external effects) it is said to be socially efficient or in a state of allocative equilibrium
- This means that resources are allocated in the most efficient way from SOCIETIES POINT OF VIEW





# Allocative Efficiency

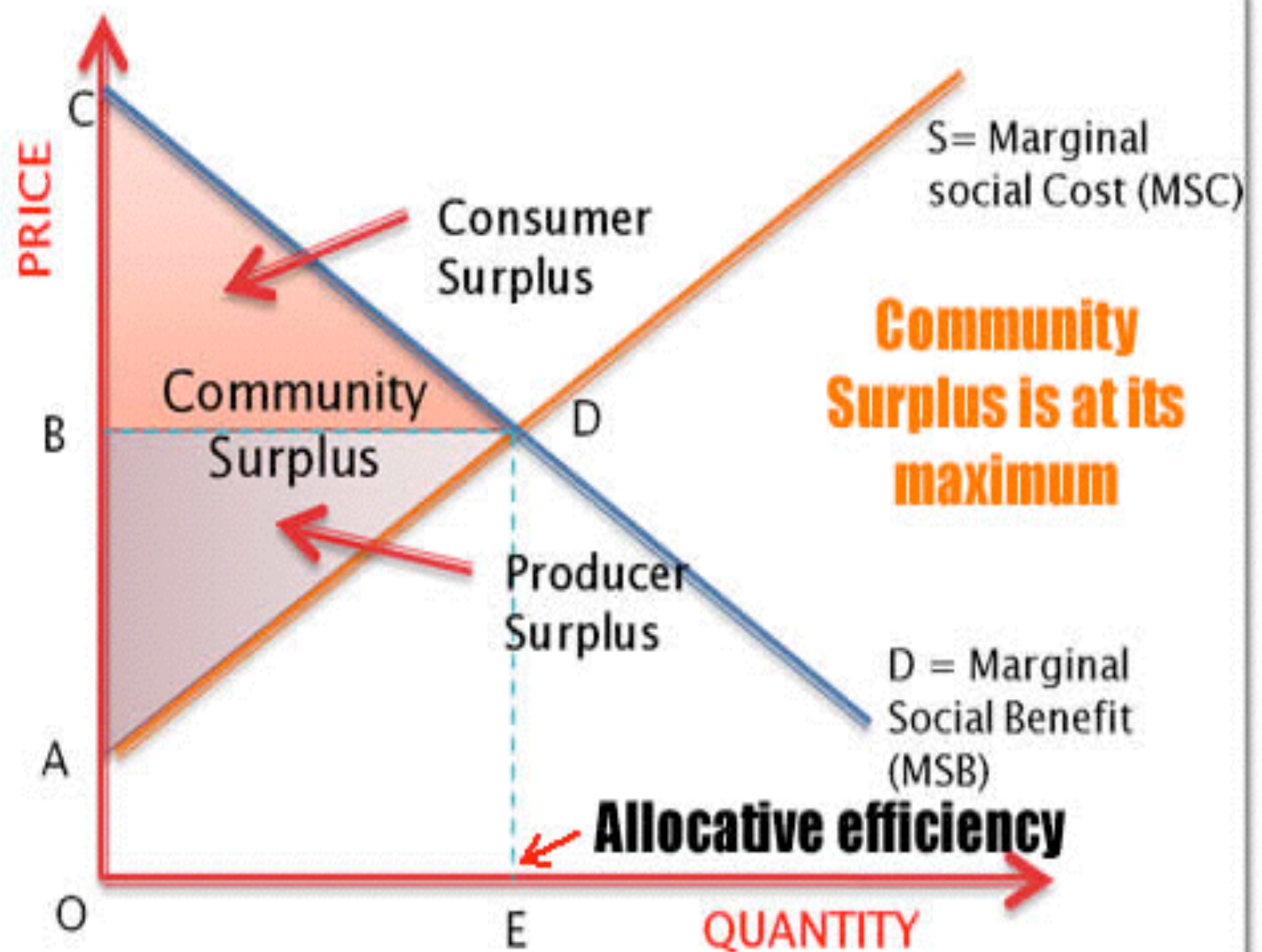
- The graph shows consumer surplus and producer surplus when market is at equilibrium
- The sum of consumer and producer surplus is known as community surplus = total benefit to society





# Allocative Efficiency

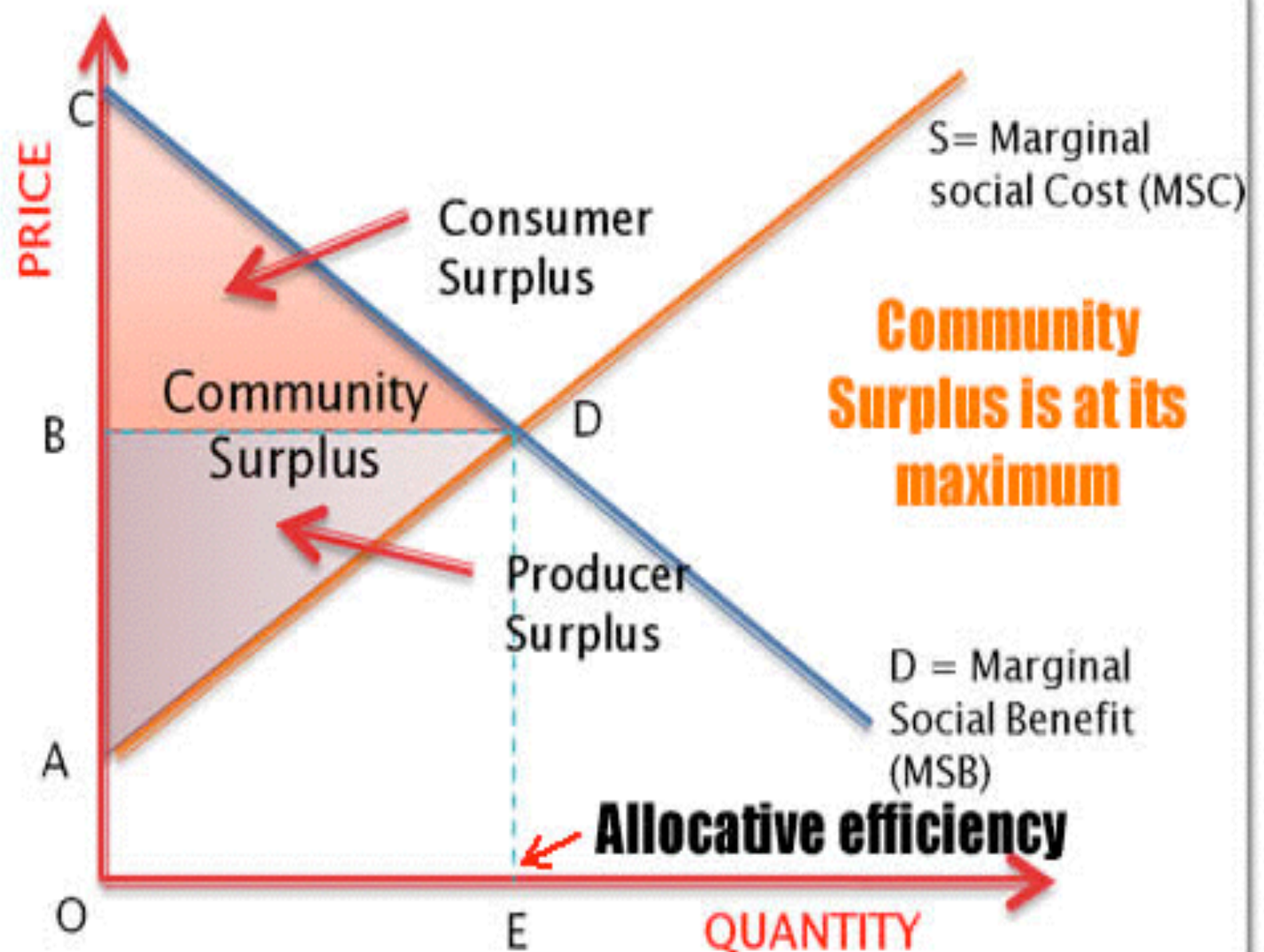
- At the equilibrium (E,B), community surplus is maximized
- This is the point of allocative efficiency
- Given the supply and demand situation, there is no other combination of price and quantity on the diagram that could give a greater community surplus





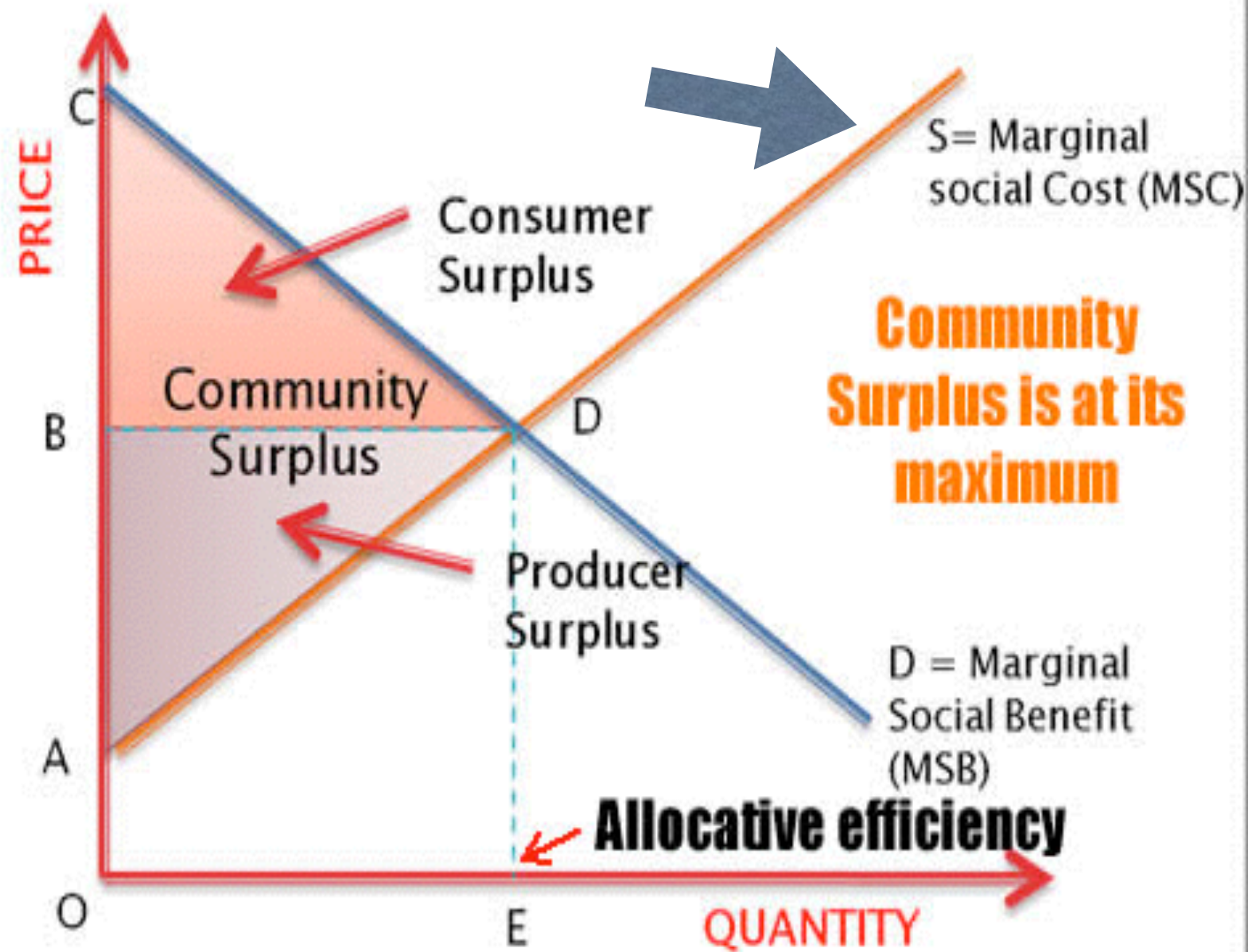
# Allocative Efficiency

- This is the optimal allocation of resources from the point of view of society.
- Consumers may prefer lower prices and producers may prefer higher prices, but with this demand and supply curves, this is the allocatively efficient price and quantity
- Community surplus is maximized





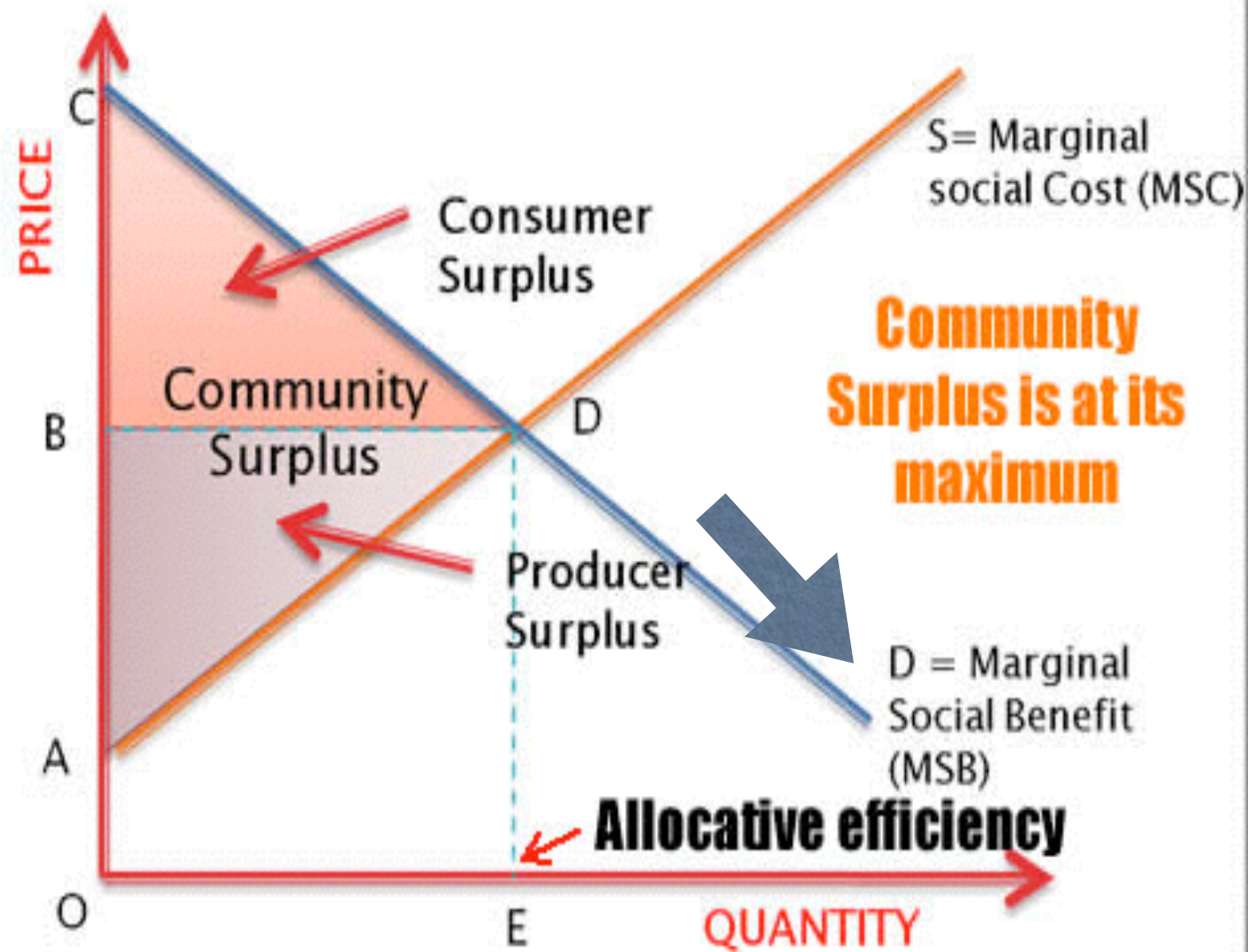
# Allocative Efficiency



- When we assume that the costs of the industry are equal to the costs to society then the supply curve represents the social cost curve
- Marginal Social Cost Curve (MSC)



# Allocative Efficiency



- If we assume that the benefits in the market are equivalent to the benefits to society, then the demand curve represents the social benefits
- Marginal Social Benefit Curve (MSB)