

Economics for business 2

Revision lecture:

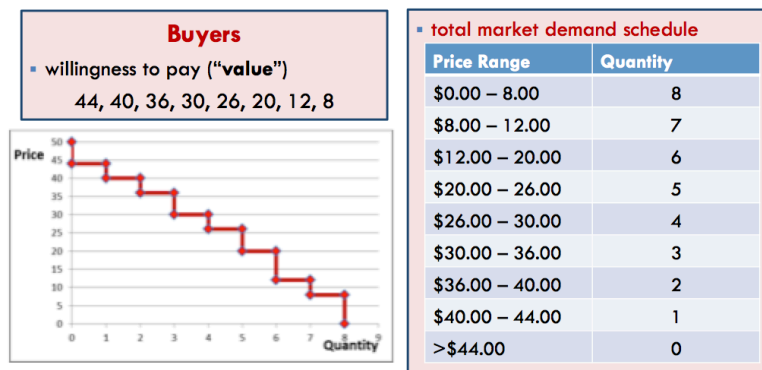
Demand, supply and markets:

- The terms supply and demand refer to the behavior of people as they interact with one another in markets

Demand:

- **Quantity demanded (QD):** amount of a good that buyers are willing and able to purchase.
- **Demand schedule:** a table that shows the relationship between the price (P) of a good and the quantity demanded (QD).
- **Demand curve:** a graph of the relationship between the price (P) of a good and the quantity demanded (QD).

Building the total market demand:



market demand curve is a *horizontal* sum of individual demand curves

Supply:

- **Quantity supplied (QS):** the amount of a good that sellers are **willing** and **able** to sell.
- **Supply schedule:** the supply schedule is a **table** that shows the relationship between the **price (P)** of a good and the **quantity supplied (QS)**.
- **Supply curve:** the supply curve is a **graph** of the relationship between the **price (P)** of a good and the **quantity supplied (QS)**.

Building the total market supply:



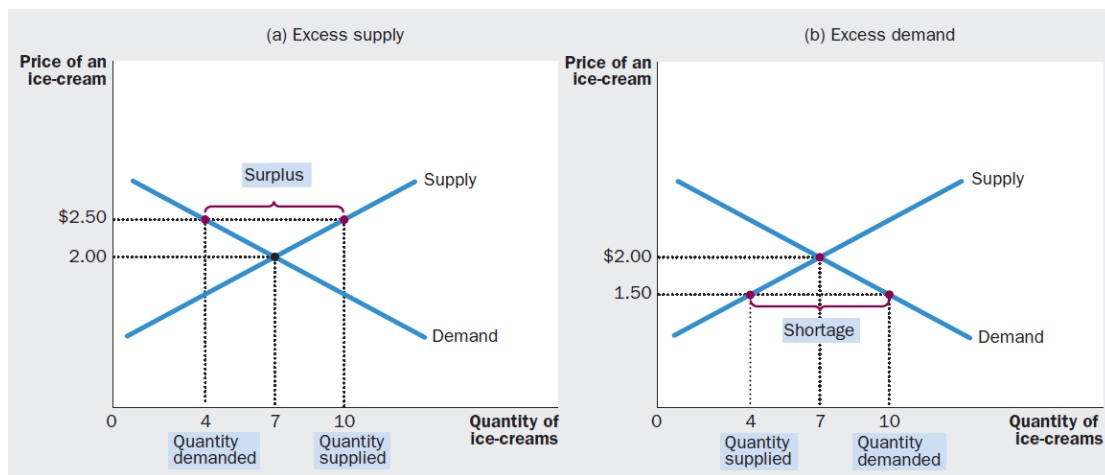
market supply curve is a *horizontal* sum of individual supply curves

Supply and demand together:

- Market will be in “equilibrium”
 - **where total market demand is equal to the total market supply** and we will observe equilibrium price and equilibrium quantity traded
 - All buyers determine total market demand
 - All sellers determine total market supply
- Equilibrium is where supply and demand are balanced
- Equilibrium price (P_e or P^*):
 - The price that balances quantity supplied and quantity demanded.
 - On a graph, it is the price at which the supply and demand intersect
- Equilibrium quantity (Q_e or Q^*):
 - Both the quantity supplied and the quantity demanded at the equilibrium price.
 - On a graph it is the quantity at which the supply and demand curves intersect.

What if a market is not in the equilibrium?

- When market price $>$ equilibrium price, then there is a **surplus**.
 - Suppliers lower price to increase sales, thereby moving toward equilibrium.
- When market price $<$ equilibrium price, then there is a **shortage**.
 - Suppliers raise price to increase profit, thereby moving toward equilibrium.



Economic equilibrium:

- Equilibrium is a standard **model** of how price is **determined** in the markets.
- But a model is only a model: any model differs from reality!
- **Perfect competition**
 - **Many buyers and sellers** such that **no** single buyer or seller can influence market price. In other words, buyers and sellers are “price takers” (they take price as given).
 - Products are all the **same**.
- **Monopoly**
 - One seller.
 - Seller controls the price. (“price maker”)

Function in mathematics:

- Mathematical function:
 - Function is a rule which assigns to each value of a variable x (called the argument of the function), one and only one value $f(x)$ (referred to as the value of the function)
- Individual demand function:
 - Is a function describing the behavior of a buyer and giving for each price P the corresponding quantity demanded, QD . Thus QD is a function of P . P is the argument)
- Individual supply function:

- Is a function describing the behavior of a seller and giving for each price P the corresponding quantity supplied QS.

How to represent a function:

- Formula
 - Most precise way
- Table
 - Clearest way to see value of the function for specific values of the argument
- Graph
 - Visual way to represent the function

Decreasing functions and the law of demand:

- Law of demand:
 - All other things being equal, the quantity demanded (QD) of a good falls when the price (P) of the good rises
 - Function is called decreasing if with larger arguments its values get smaller. Formally: if $x_1 > x_2$ then $f(x_1) < f(x_2)$
 - In case of the demand function, if $P_1 > P_2$, then $QD(P_1) < QD(P_2)$.
 - The law of demand says that the demand functions are decreasing
 - The graphs of decreasing functions are downward sloping curves
- Law of supply:
 - Other things being equal, the quantity supplied (QS) of a good rises when the price (P) of the good rises
 - Function is called increasing if the larger arguments its values get larger.
 - Formally: if $x_1 > x_2$ then $f(x_1) > f(x_2)$
 - In case of the demand function, if $P_1 > P_2$, $QS(P_1) > QS(P_2)$
 - The law of supply says that the supply functions are increasing
 - The graphs of increasing functions are upward sloping curves

Equilibrium as a solution of an equation:

$QD(P) = 10 - P$ is the demand function, $QS(P) = 1 + 3P$ is the supply function. What is the equilibrium price and what is the equilibrium quantity?

Solution:

1 step: Substitute unknown equilibrium quantities into both formulas:

$$Q^* = 10 - P^* \quad \text{and} \quad Q^* = 1 + 3P^*$$

2 step: Combine these equations together by equalizing the right hand sides:

$$10 - P^* = 1 + 3P^*$$

3 step: Make simple algebraic manipulations (add P^* to both sides, then subtract 1 from both sides, then divide both sides by 4. You found **the equilibrium price!**)

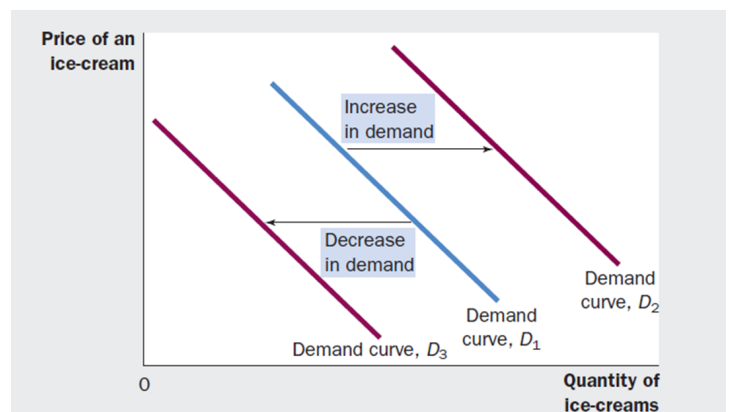
$$10 = 1 + 4P^* \rightarrow 9 = 4P^* \rightarrow P^* = 9/4$$

4 step: Substitute price in any of the first two equations to find **equilibrium quantity**.

$$Q^* = 10 - P^* = 10 - 9/4 = 40/4 - 9/4 = (40 - 9)/4 = 31/4$$

Shifts in the demand curve:

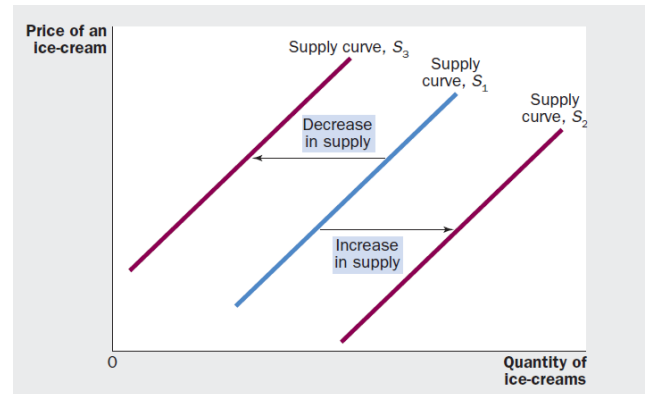
- Law of demand concerns shifts in the quantity demanded only generated by a change in the (own) price of the product (movement along the demand curve).
 - But there are also shifts of the demand curve to the left or right.



- The most important variables which may cause this shift include:
 - o Consumer income
 - o Price of related goods
 - o Tastes
 - o Number of buyers
 - o Expectations
- If income increase and the demand for the good rises, it is considered normal (holiday), however if the demand falls the product is considered inferior (home brand noodles).
- If the price of a related good falls and the demand for another good rises, the two products are complements (iPod and CD), however if the demand falls, then the goods are considered substitutes (Coke and Pepsi)

Shifts in the supply curve:

- Law of supply concerns shifts in the quantity supplied only generated by a change in the own price of the product (movement along the supply curve)
 - o But there are also shifts of the supply curve to the left or right
- The most important variables which may cause this shift are:
 - o Input prices
 - o Technology
 - o Number of sellers
 - o Expectations



Three steps to analyzing changes in equilibrium:

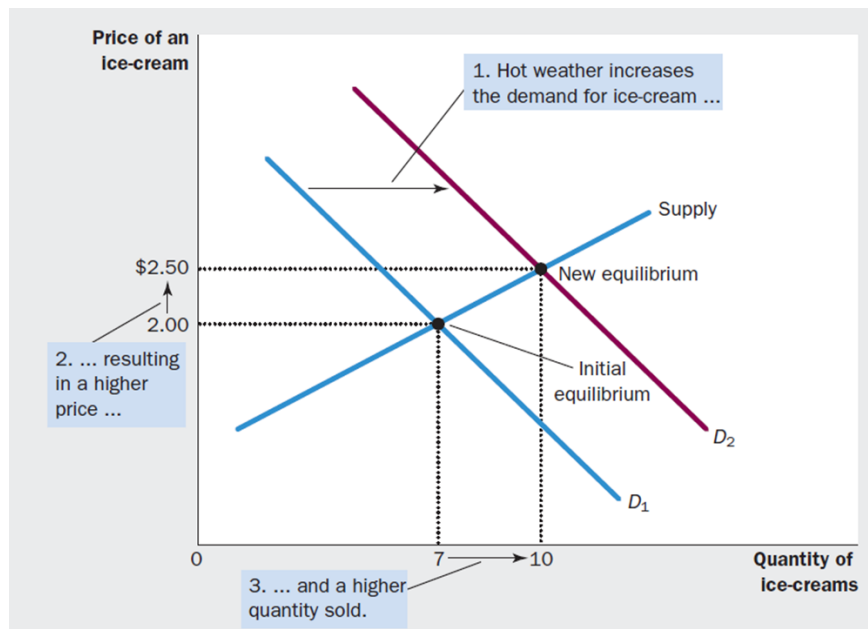
- 1) Decide whether the event shifts the supply or demand curve (perhaps both)
- 2) Decide in which direction the curve shifts
- 3) Use the supply and demand diagram to see how the shift changes the equilibrium

Summary:

- There is a variety of **markets** around us, where buyers (consumers) and sellers (producers) meet and interact.

Quantity traded and transaction prices come from this interaction

- The **demand curve** shows
 - how the quantity of a good depends upon the price; and
 - slopes downward (=demand function **decreases**) according to the law of demand
- Other determinants of demand include income, tastes, expectations and the prices of complements and substitutes. If one of these factors changes, the demand curve shifts.
- The **supply curve** shows
 - how the quantity of a good supplied depends upon the price; and
 - slopes upwards (=supply function **increases**) according to the law of supply
- Other determinants of supply include input prices, technology, expectations. If one of these factors changes, the supply curve shifts.
- **Model of market equilibrium** postulates that aggregate demand is equal to aggregate supply.
- Model of market equilibrium works especially well for **competitive markets**:



- many buyers and sellers, each with negligible influence on the market price.
- The supply-and-demand diagram can be used to analyse how events affect the equilibrium price and quantity.
- Solving the algebraic equation we can find the equilibrium demand and supply.
- In market economies, prices are the signals that guide economic decisions and thereby allocate resources.