In this lesson we will:
- Explain the Laws of Demand & Supply and what shifts each curve
- Discuss the concepts of elasticity as well as consumer and producer surpluses
- Study how markets adjust to changes in supply and demand

The US market is able to coordinate the actions of close to 300 million individuals and supply most of the products that we desire at a reasonable price. How can we ensure that we will have enough professors in CCU or enough food at the supermarket?

Law of Demand: Price and quantity demanded are inversely related.
- An individual’s demand can be represented using a downward sloping demand curve.

There are two effects that make demand downward sloping:
- Substitution Effect: As price rises consumers tend to switch to substitutes. (Examples: when the price of chicken rises people tend to buy more meat, others?
- Income Effect: As the price of one good increases it reduces consumers’ purchasing power (their ability to buy goods), which leads them to buy less of most goods.
  - Since our income is constrained, as the price of one good increases we have to sacrifice more of other goods in order to purchase it. Large income effect: car or cereal?
  - Some goods are inferior (over some price range), which means that we buy less of them as our income increases. Can you think of some inferior goods?
  - The market demand curve reflects the Total Willingness to Pay of all the consumers in the market for a given quantity of the good – the sum of the indiv. demand curves.

Consumer Surplus: The difference between the price the consumer pays and the consumer’s maximum willingness to pay. How do you know how much something is worth to a person?

The total consumer surplus in the market is the area below the demand curve and above the price (it is the sum of all the individual consumer surpluses).

The demand curve can be elastic (flat) indicating a high price-responsiveness or inelastic (steep) indicating a low price responsiveness. Name some elastic & inelastic good.
- An increase in the price (p) of the good will decrease the quantity demanded (Q_D); a decrease in p would increase Q_D, causing a movement along the demand curve.
- Other variables may cause demand to increase (shift to the right, which implies that the quantity demanded is higher at every price) or decrease (shift to the left).
Demand Shifters:
- Tastes and Preferences. What affects our taste & preferences?
- Income (the more income one has the more normal goods he is going to purchase).
- Changes in the number of consumers. Why?
- Anticipated future prices. If everyone expect prices to rise what will happen to D?
- The Price of related goods (Substitutes and Complements).

**Substitute:** A good that can be used in place of another good (has similar attributes).
\[ P_{\text{substitute}} \uparrow \Rightarrow Q_{D_{\text{substitute}}} \downarrow \Rightarrow D_{\text{good}} \uparrow \] (shift to the right). **List two substitutes.**

**Complement:** A good that is used in conjunction (together with) another good.
\[ P_{\text{complement}} \uparrow \Rightarrow Q_{D_{\text{complement}}} \downarrow \Rightarrow D_{\text{good}} \downarrow \] (shift to the left). **List two complements.**

**Law of Supply:** Price and Quantity Supplied are directly related.
- Remember that the price determines how much the supplier gets for his product. As price increases the opportunity cost of other activities increases as well.
- When the price of a good increases the opportunity cost of not producing it (or producing something else) increases. How many of you will work for $5 per hour?

**Changes in Supply v. Changes in Quantity Supplied:**
- An increase in price will increase the quantity supplied (\(Q_S\)) and a decrease in price would decrease \(Q_S\), causing a movement along the supply curve.
- Other variables may cause supply to increase (shift to the right, which implies that the quantity supplied is higher at every price) or decrease (shift to the left).
- A market supply curve is the summation of all the individual supply curves (MCs).

**Supply Shifters:**
- Prices of inputs. What would an increase in wage do to production cost?
- Improvement in technology makes production more efficient (cheaper).
- The number of suppliers. How will it affect supply?
- Anticipated changes in the price of the good. Example: a wine seller.

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**Figure 3-2:**

**Producer Surplus:**

The difference between the price of the good and the cost (including opportunity cost) of all the inputs that were used for its production.

Producer surplus is the net gain of all the inputs of production, while profit is the net gain of the entrepreneur alone.

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The supply curve can be elastic (flat) or inelastic. Name goods with inelastic supply.
- If both supply and demand shift, the change in one of the variables (either price or quantity) will be ambiguous (it will depend on the relative shift of the curves).
The market will settle on quantity $Q^*$ and price $P^*$.

There is an Adjustment Mechanism that will lead us to a stable equilibrium (the market will always tend to converge to the equilibrium following a perturbation).

- If the price is too low there will be a shortage (excess demand) and consumers will bid up the price.
- If the price is too high there will be a surplus (excess supply) and producers will lower price to dispose of excess inventory (which can spoil). *Example?*

Scenarios about the Market for Bread (assume all other things remain constant):

1. The prices of butter increases.
2. A drought causes the price of wheat to rise.
3. Due to population growth the number of consumers increases.
4. Technological advances allow companies to produce bread more efficiently and consumers to use bread in order to help them prevent heart disease.
5. The price of bagels (which use a similar production process to bread) increases.
6. The government imposes a high income tax and uses the revenue collected from the tax to subsidize the production of bread.

Elasticity and changes in the market:

- If demand is very inelastic a change in supply will barely affect quantity. *Can you think of an example of an inelastic good? What will happen if demand is elastic?*
- If supply is very inelastic a change in demand will barely affect quantity. *Can you think of an example of an inelastic good? What will happen if supply is elastic?*