

Topic 3 – Supply and Demand

Big Question – How do markets function to determine prices?

Listen to “What’s Driving Low Gas Prices? A Global Oil Glut” | NPR
January 17, 2019

- What factors influence the price of gas?
- How does the price of gas influence how much gas people buy? And how much is produced?
- How does the price of gas affect consumption of other goods?

I. Demand

a. Demand: the relationship between the price and the quantity of a good that people wish to buy.

Example: Graph demand for ice cream as described by the equation below.

What is the quantity
demanded at a price of \$4?

$$\text{Demand: } P = 6 - 0.25Q$$

... at a price of \$2?



Remember: $y = m \cdot x + b$ where m is the slope and b is the y-intercept

b. The demand curve is _____ sloping for two reasons.

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a. Demand represents the value of the good to consumers (buyers' reservation price).

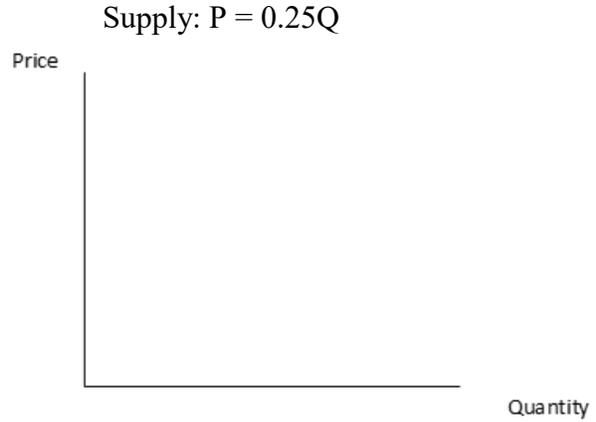
II. Supply

- a. Supply is the relationship between the price of a good and the quantity of that good, which people would like to sell.

Example: Graph demand for ice cream as described by the equation below.

What is the quantity supplied at a price of \$4?

... at a price of \$2?



- b. The supply curve is _____ sloping for two reasons.

-
-

- c. Supply represents the cost of production (sellers' reservation price).

III. Equilibrium

- a. Equilibrium is a point in a system where there is no force for change.
- b. In the model of Supply and Demand, equilibrium occurs where _____.

Solve for the equilibrium price and quantity in this example, and show it on your graph.

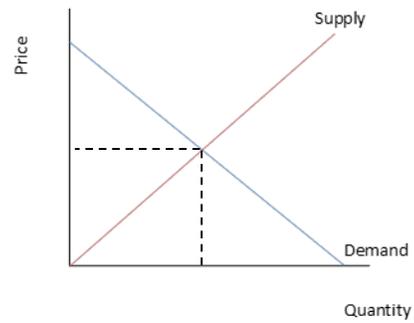
Demand: $P = 6 - 0.25Q$

Supply: $P = 0.25Q$

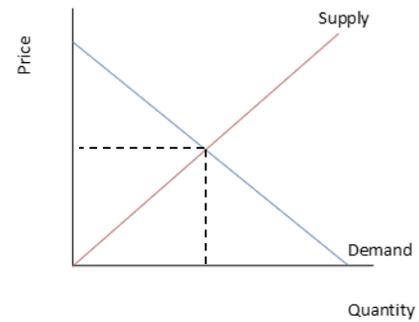


- c. Equilibrium occurs when all mutually beneficial trades are exhausted.

d. What happens if the market price is lower than the market equilibrium price?

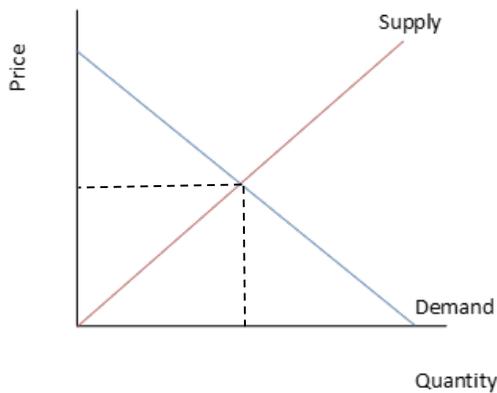


e. What happens if the market price is higher than the market equilibrium price?

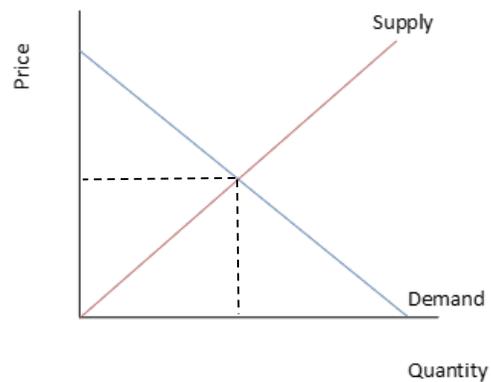


IV. Shifts in Supply and Demand

A change in the price of a good will NOT result in a change in demand for that good.



Increase in Demand



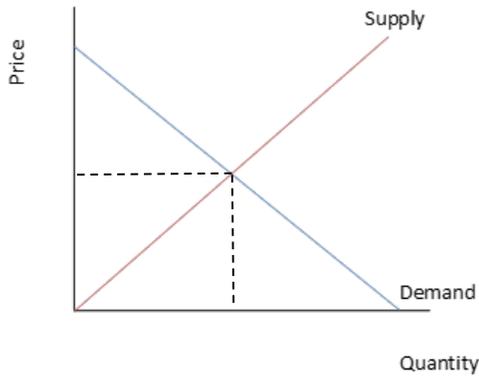
Decrease in Demand

Demand will shift if there is a change in

- Consumer Income
 1. Normal Goods
 - An increase in income will cause demand to _____.
 - Examples:
 2. Inferior Goods
 - An increase in income will cause demand to _____.
 - Examples:

- The number of consumers
- Consumer tastes or preferences
- The price of a substitute in consumption

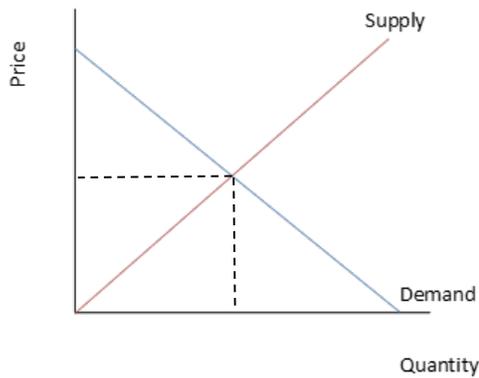
Show the effect of an *increase* in the price of a substitute in consumption.



Examples:

- The price of a complement in consumption

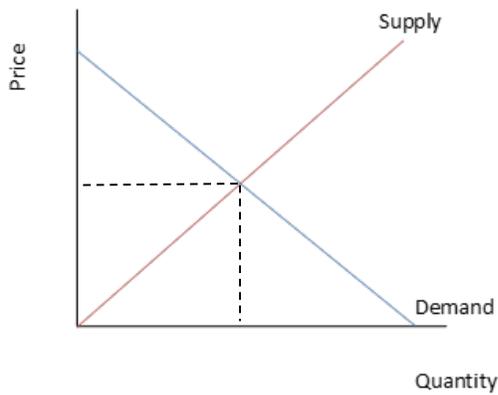
Show the effect of an *increase* in the price of a complement in consumption.



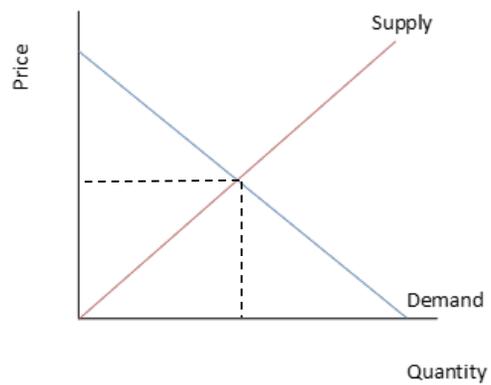
Examples:

V. Shifts in Supply

A change in the price of a good will **NOT** result in a change in supply for that good.



Increase in Supply

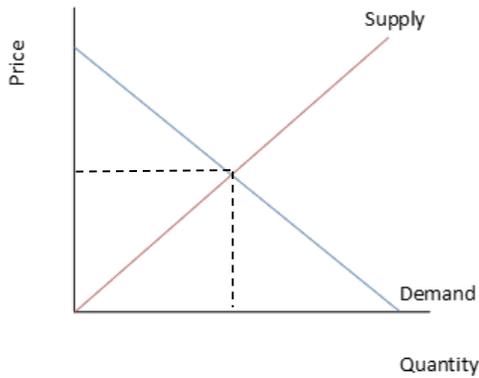


Decrease in Supply

Supply will shift if there is a change in

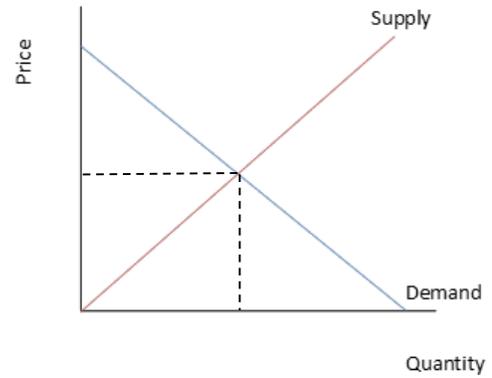
- Technology

Show the impact of a new technology.



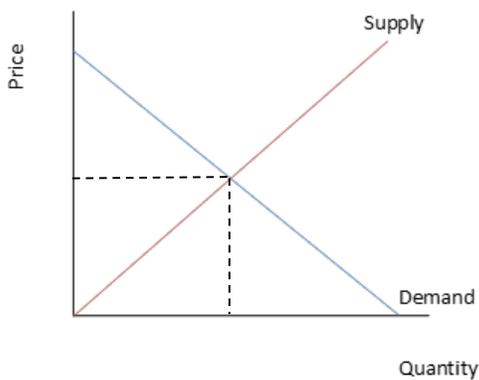
- Input prices

Show the impact of an increase in the price of rubber on the market for tires.



- The number of suppliers
- The price of a substitute in production

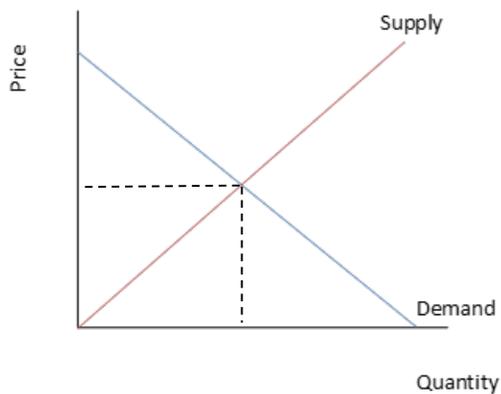
Show the effect of an *increase* in the price of a substitute in production.



Examples:

- Changes in the price of a complement in production

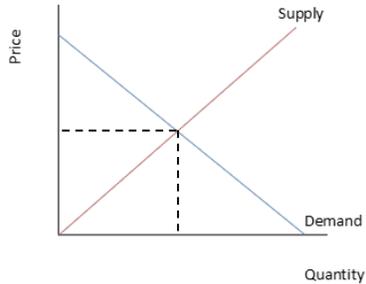
Show the effect of an *increase* in the price of a complement in production.



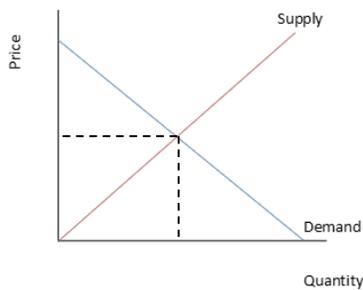
Examples:

Example: Listen to “[Late potato planting could affect french fry supply](#)”. Show the impact of colder than average spring weather in the Northwest United States on the markets for each of the following products. Indicate what you expect to happen to the market equilibrium price of each product.

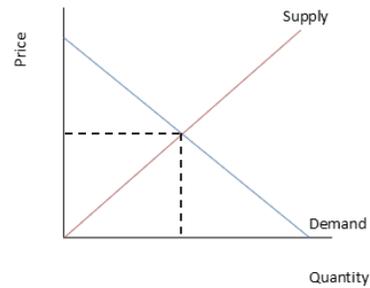
1. Show the impact of colder than average spring weather on the market for potatoes.



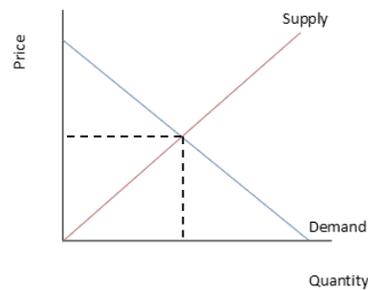
2. Potatoes are an input in the production of fries. Show the impact on the market for french fries.



3. Many people enjoy eating fries with their burgers. Show the impact on the market for ketchup.



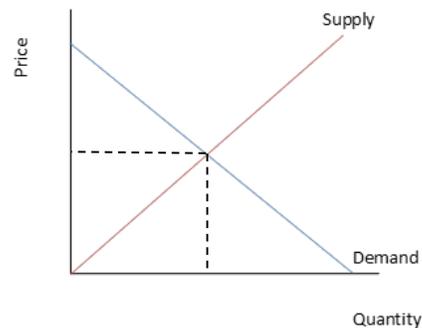
4. Sweet potatoes are grown primarily in the south, so harvests were unaffected by weather in the northwest. Show the impact on the market for sweet potatoes.



VI. Simultaneous Shifts in Both Supply and Demand

When supply and demand shift at the same time, the change in one variable, either price or quantity will be indeterminate.

Show the effect of a decrease in the price of a complement at the same time that a new technology decreases production costs.



$$\frac{\begin{cases} \uparrow S \Rightarrow \uparrow Q, \downarrow P \\ \uparrow D \Rightarrow \uparrow Q, \uparrow P \end{cases}}{\uparrow Q, \text{indeterminate } \Delta P}$$

$$\frac{\begin{cases} \downarrow S \Rightarrow \downarrow Q, \uparrow P \\ \downarrow D \Rightarrow \downarrow Q, \downarrow P \end{cases}}{\downarrow Q, \text{indeterminate } \Delta P}$$

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VII. Assignments

- a. Video Assignment 2 due on Brightspace at 11:00pm on 1/24/20
- b. Problem Set 3 due in class on 1/28/20