

Problem Set Two Solutions

Chapter 3

2. How would each of the following affect the U.S. market supply for corn? Does the supply curve shift left or right and why?

a. A new and improved crop rotation technique is discovered.

Answer: The supply curve would shift right. The discovery is a technological improvement. The improved technique would enable more crops to be produced with the same inputs.

b. The price of fertilizer falls.

Answer: The supply curve would shift right. Fertilizer is an input. Lower input prices shift the supply curve to the right.

c. The government offers new tax breaks to farmers.

Answer: The supply curve would shift right. The new tax breaks make farming relatively more profitable than before. Thus those who were employed in a job that was just a little better than being a farmer would switch to farming.

d. A tornado sweeps through Iowa.

Answer: The supply curve would shift left. Tornadoes destroy corn.

4. An Arizona student claims to have spotted a UFO over the desert outside of Tucson. How will his claim affect the *supply* (not the quantity supplied) of binoculars in Tucson stores?

Answer: The demand for binoculars might increase, leading to an increase in the quantity of binoculars supplied, but no change in the supply of binoculars should occur. The UFO sighting does nothing to change the factors that govern the supply of binoculars.

5. What will happen to the equilibrium price and quantity of oranges if the wage paid to orange pickers rises?

Answer: An increase in the cost of an input used in orange production will shift the supply curve of oranges to the left, resulting in an increase in the equilibrium price and a decline in the equilibrium quantity of oranges.

6. How will an increase in the birth rate affect the equilibrium price of land?

Answer: An increase in the birth rate will increase the population of potential buyers of land, and hence shift the demand curve for land to the right, resulting in an increase in the equilibrium price of land.

9. Use supply and demand analysis to explain why hotel room rental rates in Bryan College Station during parents weekend and graduation weekends might differ from the rates charged during the rest of the year?

Answer: Compared with the rest of the year, there are more people who want to stay in hotel rooms near campus during parents' weekend and graduation weekends. Thus the demand curve shifts to the right during these weekends. This implies a higher equilibrium price for hotel rooms.

12. What will happen to the equilibrium quantity and price of potatoes if population increases and a new, higher yielding variety of potato plant is developed?

Answer: The population increase causes a rightward shift in the demand curve for potatoes, and the development of the higher yielding variety causes a rightward shift in the supply curve for potatoes. The equilibrium quantity of potatoes goes up, but the equilibrium price may go either down or up.

13. What will happen to the equilibrium price and quantity of apples if apples are discovered to help prevent colds and a fungus kills 10 percent of existing apple trees?

Answer: The discovery of the cold-fighting property causes a rightward shift in the demand curve for apples, and the fungus causes a leftward shift in the supply curve. The equilibrium price of apples will rise, but the equilibrium quantity may go either down or up.

14. What will happen to the equilibrium quantity and price of corn if the price of butter (a complement) increases and the price of fertilizer decreases?

Answer: Since butter and corn are complements, an increase in the price of butter will cause the demand curve for corn to shift leftward. The fertilizer price decrease causes the supply curve for corn to shift rightward. The equilibrium price of corn falls, but the equilibrium quantity may go either down or up.