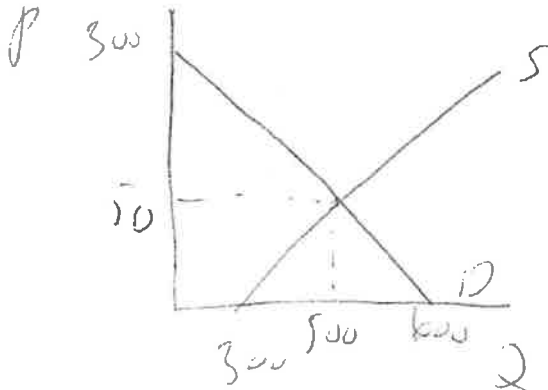


Answer Key

EC 204 Homework 1

1.) The demand and supply curves for coffee are given by $Q_d = 600 - 2P$ and $Q_s = 300 + 4P$.

a.) Plot the supply and demand curves.



b.) Determine the equilibrium price and quantity. Plot those points on the graph.

$$600 - 2P = 300 + 4P$$

$$6P = 300 \quad Q = 500$$

$$P = 50$$

c.) Now suppose that the price of coffee is \$70 instead of the equilibrium price you found. What are Q_d and Q_s ? This is not equilibrium, what is it?

$$Q_d = 460 \quad Q_s = 580, \quad \text{surplus of } 120$$

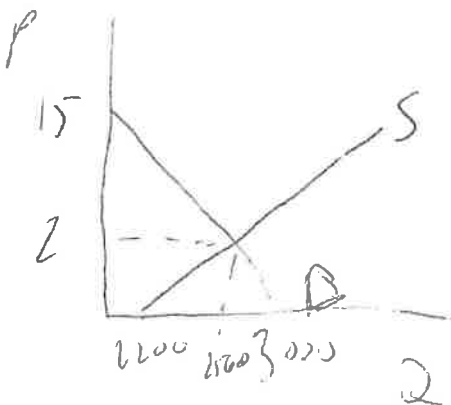
2.) From statistical studies, we know that for 1981 the supply and demand curves for cotton produced domestically in the U.S. were given by:

$$Q_s = 2200 + 180P$$

$$Q_d = 3000 - 220P$$

Where quantities are in millions of bales per year and price is in nominal dollars per bale.

a. Calculate the equilibrium price in this market. Plot the supply and demand curves and show this equilibrium price and quantity.



$$2200 + 180P = 3000 - 220P$$

$$400P = 800$$

$$P = 2$$

$$Q = 2,560$$

b. Calculate the point price elasticities of demand and supply at this equilibrium.

$$PED = \frac{2}{2560} (-220) = -0.172$$

$$PES = \frac{2}{2560} (180) = 0.141$$

$$\text{Absolute value} = 0.172$$

c. Suppose that in 2007 the demand and supply were given by $Q_s = 1460 + 115P$ and $Q_d = 2900 - 125P$. Plot these curves on your original diagram. What happened to demand and supply over this time period? What explanations might you give for these changes? What is your new equilibrium price and quantity exchanged? What are price elasticities of demand and supply at the new equilibrium?

$$1460 + 115P = 2900 - 125P$$

$$P = 6, Q = 2,150$$

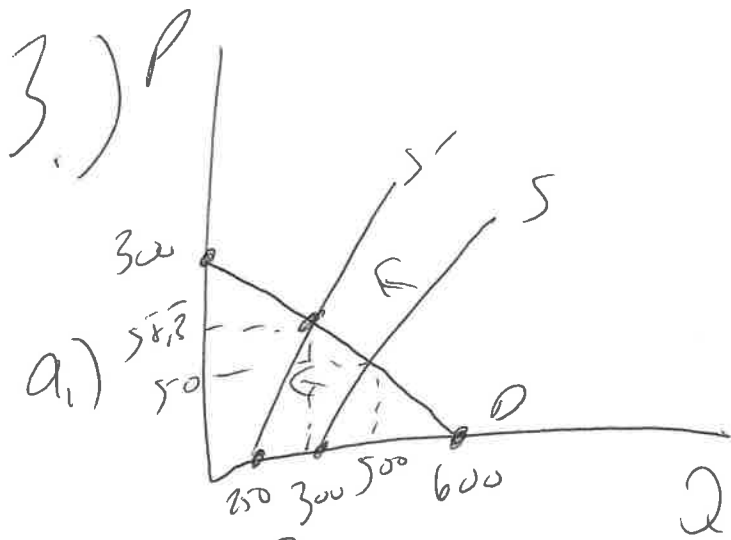
$$PED = 0.35 \quad PES = 0.32$$

Demand did not shift much but we are more elastic.

There may be less farms, more price sensitive.

d. Think about the market for cotton. What predictions might you make about the supply and demand in the U.S. market over the next 10 years? What will happen to prices? Why? Carefully explain.

Many possibilities - explanation should just make sense economically.

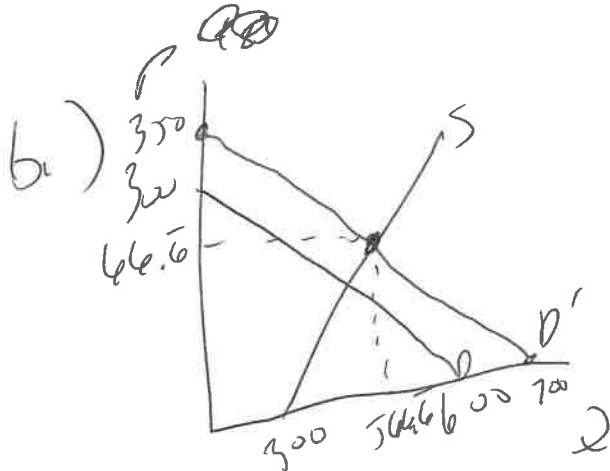


$$250 + 4P = 600 - 2P$$

$$6P = 350$$

$$P = 58.\bar{3}$$

$$Q = 483.\bar{3}$$



$$700 - 2P = 300 + 4P$$

$$400 = 6P$$

$$P = 66.\bar{6} \quad Q = 566.\bar{6}$$

c.) $P_1 = 50$ $P_2 = 58.\bar{3}$ Price increased $\$8.33$

$Q_1 = 500$ $Q_2 = 483.\bar{3}$ Q decreased $16.\bar{66}$

d.) $P_1 = 50$ $P_2 = 66.\bar{6}$ Price increased $16.\bar{66}$

$Q_1 = 500$ $Q_2 = 566.\bar{6}$ Q increased $166.\bar{6}$