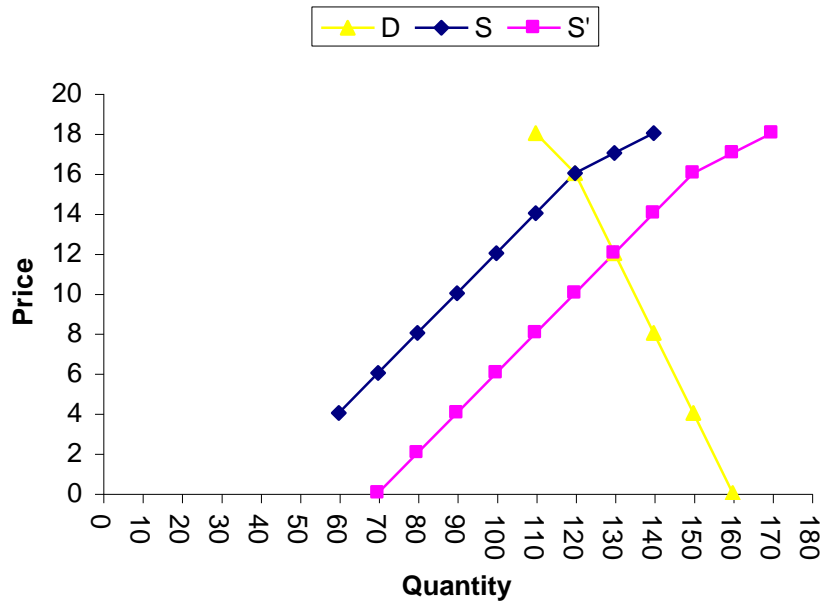


1. The table below shows the demand and supply for Kiwi in the U.S.

Quantity Demanded (000s bushels)	Price per Bushel	Quantity Supplied (000s bushels)
150	4	60
140	8	80
130	12	100
120	16	120
110	18	140

a. Graph the demand and supply curves in the figure below. Indicate the equilibrium price and quantity.



b. Based on the equilibrium above, compute the total income of Kiwi growers.

Equilibrium occurs at $P = 16$ and $Q = 120,000$.

This implies that Kiwi growers will earn $\$16 * 120,000 = \$1,920,000$ in income.

c. Now assume that the growing conditions have yielded a record Kiwi crop, giving the new supply schedule below:

Price per Bushel	Quantity Supplied (000s bushels)
4	90
8	110
12	130
16	150
18	170

Add this supply curve to your graph above. Show the new equilibrium quantity and price of Kiwi. Calculate the new total income of Kiwi growers.

The new equilibrium is $P = 12$ and $Q = 130,000$.

This implies that Kiwi growers will earn $\$12 \times 130,000 = \$1,560,000$ in income

d. Explain how a year of great growing conditions can hurt farmer's incomes.

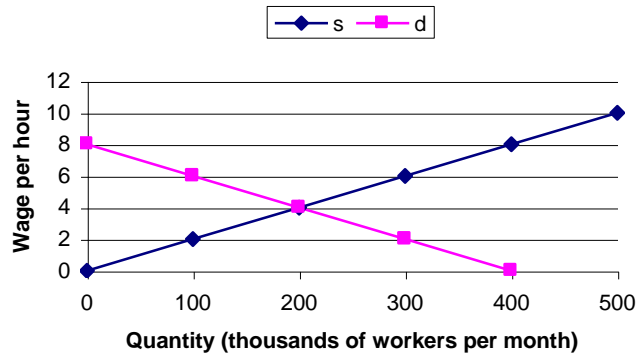
The great growing year generates an increase in the supply of Kiwi. This has good and bad impacts on farmers. The "good" is that more Kiwi is sold. The "bad" is that the increase in supply generates a lower price. Farmers' incomes can be hurt if the lower price is large enough to offset the increase in sales.

e. Explain inelastic demand in terms of change in price compared to change in quantity demanded. How does agriculture's inelastic demand affect farm incomes?

If demand is inelastic, then for a given change in price and quantity, the percent change in price is larger than the percent change in quantity. If price falls and quantity sold rises, total income to farmers (total revenue from Kiwi sales) falls, as shown in part d.

Test yourself: What would have happened in part d if demand were elastic?

2. Suppose the demand and supply of labor in Montana is given in the following graph:



a. The equilibrium wage per hour is \$4.00. The equilibrium quantity of workers hired per month is 200,000. At equilibrium, total worker income (i.e., total payroll spending) is \$800,000.

b. At equilibrium, the value of consumer surplus in the market for labor is $$.5 \times 4 \times 200,000 = \$400,000$. The value of producer surplus in the market for labor is $$.5 \times 4 \times 200,000 = \$400,000$. The value of the total gains from trade is \$800,000. Define in your own words what each of these values/concepts represent in this market. (Recall that in the labor market, *workers* are the producers and *firms* are the consumers).

Producer surplus is the difference between the wages workers are willing to work for and the wage they earn in the market.

Consumer surplus is the difference between the wages firms are willing to pay workers and the wages they actually pay.

c. Suppose the state government institutes a minimum wage of \$7.00 per hour, the new quantity of labor demanded is 50,000 and the new quantity of labor supplied is 350,000. At this new wage, total worker income is \$350,000.

d. At the new wage, the value of consumer surplus in the market for labor is $$.5 \times 1 \times 50,000 = \$25,000$. The value of producer surplus in the market for labor is $$.5 \times 1 \times 50,000 + (6 \times 50,000) = \$325,000$. The gains from trade in the market is \$350,000. Explain how these values differ from those computed at equilibrium.

Consumer surplus is lower (this makes sense since firms now have to pay higher wages).

Producer surplus is higher (this also makes sense since the workers who remain employed get a big wage increase).

Overall gains from trade are lower. In other words, there is a net loss of social welfare as a result of the minimum wage.

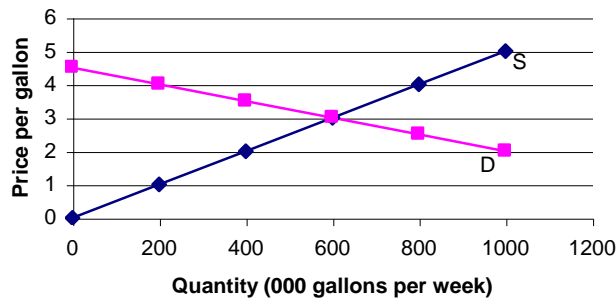
e. Which parties in the market "win" and which "lose" from the imposition of the new wage?

Winners are those who keep their jobs and get the now higher wage.

Losers are those who either lose their jobs or can't find jobs they would have had the minimum wage not been imposed (i.e., the "surplus" workers at the minimum wage level)

Losers are also firms, who now pay more for labor.

3. Suppose the demand and supply of milk is given in the following graph:



a. The equilibrium price of gallon of milk is **\$3.00**. The equilibrium quantity sold per week is **600,000**. Total farm income from milk sales is **$\$(3 \times 600,000) = \$1,800,000$** .

b. At equilibrium, the value of consumer surplus in the market for milk is **$\$(.5 \times 600,000 \times (4.5 - 3)) = \$450,000$** . The value of producer surplus in the market for milk is **$\$(.5 \times 600,000 \times 3) = \$900,000$** . The value of the total gains from trade is **$\$1,350,000$** . Define in your own words what each of these values/concepts represent in this market.

c. In your own words, explain the difference between **total farm income** from milk sales and **producer surplus** from milk sales.

Total farm income is the total (gross) earnings from milk sales (computed at $P \times Q$). Producer surplus is the difference between the price the producers are willing and able to accept to sell milk, and the price they actually earn for the milk – one could also view it as the profits to the producer from selling milk.

d. If the government supports a price of \$4.00 per gallon of milk, the new quantity of milk demanded is **200,000** and the new quantity of milk supplied is **800,000**. At this new wage, total farm income from milk sales is **$\$4 \times 200,000 = \$800,000$** . **Ceteris paribus**, describe what has happened to farm income as a result of the price support?

All else held constant, total farm income from milk sales would fall as a result of the price support. Although the farmers are able to charge more for their milk, their sales fall by more than enough to offset the price increase. In other words, elastic demand for milk means that the increase in price generates a larger negative impact on quantity demanded.

e. Ceteris paribus, at a price of \$4.00 per gallon of milk, the value of consumer surplus in the market for milk is $\$.5 * 200,000 * (4.5 - 4) = \$50,000$. The value of producer surplus in the market for milk is $\$(.5 * 200,000 * 1) + (200,000 * (4 - 1)) = \$100,000 + 600,000 = \$700,000$. The gains from trade in the market is \$750,000. Explain how these values differ from those computed at equilibrium.

Consumer surplus is lower under the price support, because consumers must pay a higher price, and fewer consumers are willing to buy milk at that price.

Producer surplus is lower at the price support because fewer producers are able to sell their product.

The gains from trade are much smaller under the price support – there is a deadweight loss of $\$13,500,000 - 750,000 = \$600,000$ as a result of the price support.

f. Ceteris paribus, at the support price, farm income from milk sales if the government buys the surplus milk is $\$4 * 800,000 = \$3,200,000$. Such a policy will cost taxpayers $\$4 * (800,000 - 200,000) = \$2,400,000$.

In other words, it costs taxpayers \$2.4 million to raise farm incomes by \$1.4 million. The difference between the two (\$1,000,000) is the deadweight loss.

g. Which parties in the market "win" and which "lose" from the price support program?

If the government buys the surplus milk, then the clear winners are the farmers, who see their incomes rise as a result of the program. If the government does not buy the surplus milk, total farm income declines under the price support program.

The losers include milk consumers, who now face higher prices for their milk and milk-derived food.

Losers also include the taxpayers, who must foot the bill for (1) the income transfer to the farmers and (2) the deadweight loss of gains to society

Homework 6 -- Multiple Choice

Quantity Demanded	Price of an espresso	Quantity Supplied
0	4.00	60
5	3.50	50
10	3.00	40
15	2.50	30
20	2.00	20
25	1.50	10

1. The demand and supply for espresso are given in the table above. Equilibrium price and quantity will be

- a. 2.00, 20
- b. 3.00, 30
- c. 3.00, 10
- d. 2.00, 40
- e. 1.50, 15

2. Based on the table above, if the government supports a price of espresso of \$3.00, there will be a

- a. shortage of 10 units of espresso
- b. surplus of 30 units of espresso
- c. shortage of 30 units of espresso
- d. surplus of 10 units of espresso

3. Programs to increase the demand for U.S. farm products include

- a. support prices
- b. food stamps
- c. the CRP program
- d. import subsidies

4. What effect would an increase in the wages of **American** workers have on the demand for **Mexican** workers, ceteris paribus?

- a. No effect on demand, because price changes affect quantity demanded, which would rise
- b. The demand would decrease
- c. The demand would increase
- d. No effect on demand, because price changes affect quantity demanded, which would fall
- e. We cannot tell unless we know what happened to the price of Mexican workers

5. An increase in the minimum wage

- a. Makes all poor people better off by increasing their incomes
- b. Does not make anyone better off because employers won't hire people if they have to pay them more
- c. Makes everyone better off by increasing the average wages in the economy
- d. Makes some workers better off by compelling their employers to pay them more
- e. Makes all of those willing to work at the minimum wage better off

6. When the demand for labor is very elastic, a given increase in the minimum wage will generate _____ relative to demand for labor that is very inelastic.

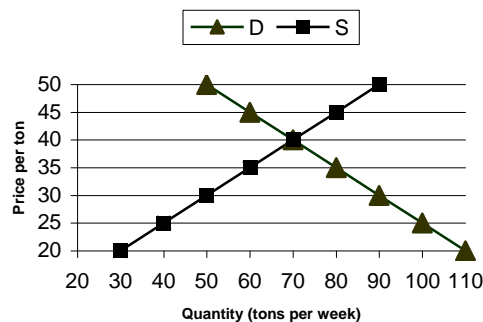
- a. a larger decrease in the quantity of labor demanded
- b. a smaller decrease in the quantity of labor demanded
- c. the same size decrease in the quantity of labor demanded
- d. a larger increase in the quantity of labor demanded

7. Suppose the elasticity of demand for low-skill labor is -1.0. Currently, the government supports a price floor that keeps the price of low-skill labor 20% above the equilibrium price. If the price floor is removed, how much more low-skill labor will be hired?

- a. 40%
- b. 30%
- c. 20%
- d. 10%
- e. not enough information to answer this question

8. Ceteris paribus, if the demand for labor is very inelastic, then a given influx of immigrant workers will have

- a. Large positive impacts on employment but small negative impacts on wages
- b. Large positive impacts on employment but large negative impacts on wages
- c. Small positive impacts on employment but small negative impacts on wages
- d. Small positive impacts on employment but large negative impacts on wages
- e. No impact on employment or wages



9. The table above shows the demand and supply of hassenfeffer per week. Ceteris paribus, if the government institutes a support price of \$50 per ton it may also need to

- a. spend \$2500 to buy the surplus hassenfeffer
- b. spend \$2500 to buy the shortage of hassenfeffer
- c. spend \$2800 to buy the surplus hassenfeffer
- d. spend \$2000 to buy the shortage of hassenfeffer
- e. spend \$2000 to buy the surplus hassenfeffer

10. Ceteris paribus, families with two income-earning parents typically dine out more than do families with a stay-at-home parent. One potential reason for this is that

- a. two-income families waste money
- b. two-income families get more utility dining out more than do other families
- c. the opportunity cost of food preparation is higher among two-income families
- d. the opportunity cost of food preparation is lower among two-income families
- e. none of the above, people's food choices have nothing to do with economics