

Problem Sets 10

Due in class Dec 10 F

1. A society of four individuals, A, B, C, and D, each characterized by his demand for automobiles, as given in the table. Assume that all automobiles are identical. The demand schedules for each person and for the group conform to the law of demand.

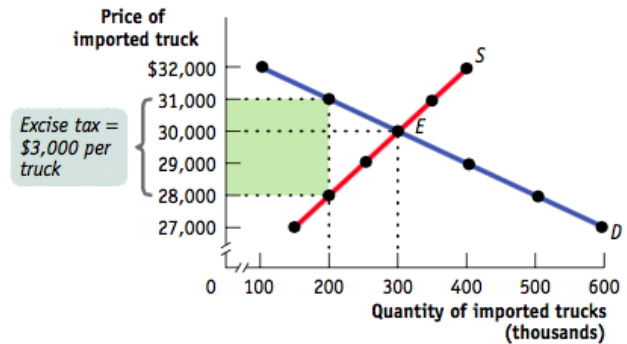
Car-ownership demands of A, B, C, and D

Price (\$)	Quantity of Automobiles				
	A	B	C	D	Total
1,000	2	0	1	1	
900	2	0	1	1	
800	2	0	1	2	
700	2	0	1	2	
600	3	0	1	2	
500	3	1	1	2	
400	3	1	2	2	
300	3	1	2	3	
200	3	1	2	4	
100	4	2	2	4	

- 1) Fill in the last column and draw the market demand curve for automobiles.
- 2) Compare A's demand schedule with B's, can we infer that B is wealthier than A? Why?
- 3) Suppose there are seven cars in this community, what is the equilibrium price?
- 4) Suppose all seven cars are owned by A, others have none. If A would like to sell some of his cars at the price of \$800 per unit, who will be the buyers? How many cars will be sold?
- 5) At \$800, how many cars would A like to own? How many cars would he actually own?
- 6) At \$800, is quantity demanded equal to quantity supplied? Is the market in equilibrium?
- 7) At \$800, how would A maximize his net benefit and what is the corresponding net benefit?
- 8) Suppose all seven cars are owned by B while others have none. What would be the market equilibrium? What would be the total market welfare?

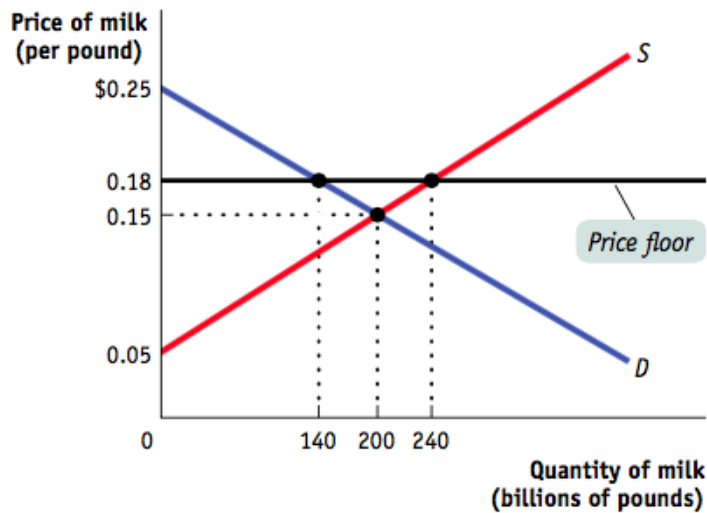
2. The U.S. government wants to help the American auto industry compete against foreign automakers that sell trucks in the United States. It can do this by imposing an excise tax on each foreign truck sold in the US. The hypothetical pre-tax demand and supply schedules for imported trucks are given below.

Price of imported truck	Quantity of imported trucks (thousands)	
	Quantity demanded	Quantity supplied
\$32,000	100	400
31,000	200	350
30,000	300	300
29,000	400	250
28,000	500	200
27,000	600	150



- 1) In the absence of government interference, what is the market equilibrium of an imported truck?
- 2) Assume that the government imposes an excise tax of \$3,000 per imported truck. Illustrate the effect of this excise tax in your diagram from part (1). How many imported trucks are now purchased and at what price? How much does the foreign automaker receive per truck?
- 3) Calculate the government revenue raised by the excise tax in part (2). Illustrate it on your diagram.
- 4) How does the excise tax on imported trucks benefit American automakers? Whom does it hurt? How does inefficiency arise from this government policy?

3. In 2014, the U.S. House of Representatives approved a new farm bill establishing the Margin Protection Program (MPP) for dairy producers. The MPP supports dairy farmers when the margin between feed costs and milk prices falls below \$0.08 per pound. Assume that current feed costs are \$0.10 per pound, which means the program creates a price floor for milk at \$0.18 per pound. At that price, the quantity of milk supplied is 240 billion pounds, and the quantity demanded is 140 billion pounds. To support the price of milk at the price floor, the U.S. Department of Agriculture (USDA) has to buy up 100 billion pounds of surplus milk. The supply and demand curves in the following diagram illustrate the market for milk.



- 1) In the absence of a price floor, how much consumer surplus is created? How much producer surplus? What is the total surplus (producer surplus plus consumer surplus)?
- 2) With the price floor at \$0.18 per pound of milk, consumers buy 140 billion pounds of milk. How much consumer surplus is created now?
- 3) With the price floor at \$0.18 per pound of milk, producers sell 240 billion pounds of milk (some to consumers and some to the USDA). How much producer surplus is created now?
- 4) How much money does the USDA spend to buy surplus milk?