

Problem 1. Suppose US demand for steel is given by $P = 200 - Q$, US supply for steel is given by $P = 50 + Q/2$, and international firms can supply as much or as little steel as they want at a price of $P_w = 80$.

- (a) Draw the supply and demand diagrams without international trade, and determine the equilibrium price and quantity.
- (b) Draw the supply and demand diagrams with international trade, and determine the equilibrium domestic price, domestic quantity supplied, and imported quantity.
- (c) In terms of US welfare, is society better with or without international sales?

Problem 2. Little Debbie Honey Buns are sold by grocery stores in City A and City B. The inverse demand curve in City A is $P_A = 40 - Q_A$, and in City B is $P_B = 40 - Q_B$. City A is served by a group of perfectly competitive grocery stores, whereas City B is served by a single grocery store. Grocery stores can purchase as many Honey Buns from Little Debbie as they want at wholesale price $P_w = 10$.

- (a) What will be the market price and quantity of Honey Buns in each location? Calculate consumer surplus and producer surplus.
- (b) A large highway is built between City A and City B. Individuals can drive between the two locations at a cost of 5 in each direction, so a total transportation cost of 10. Would the new highway affect the prices of Honey Buns sold in the two cities?
- (c) Calculate the gain and/or loss in producer and consumer surplus in both City A and City B that would result from the construction of the highway.
- (d) Briefly explain what the Economic Theory of Regulation would say about whether or not we should expect the highway to be constructed.

Problem 3. Here, have some true/false questions.

- (a) Since subsidies increase producer and consumer surplus, subsidies increase welfare.
- (b) A city wants to increase tax revenue by taxing local firms. All else equal, it should tax firms that sell goods that are hard to import rather than firms that sell goods that are easy to import.
- (c) Leakage is likely to be a bigger problem if firms in two neighboring jurisdictions are Bertrand rather than Cournot competitors.
- (d) Neighboring states setting environmental regulations can be modeled as a prisoner's dilemma.
- (e) The government is regulating an economy-wide externality and chooses the point where its estimate of the MCA and MBA curves cross. If the true MCA is below the MCA curve used by the government to set policy, then we will get too little abatement using either a tax or tradeable permits.