

Problem 1: South Korea has the following domestic supply and demand for baseball hats:

$$P_d = 20 - 2Q_d, \quad P_s = 5 + Q_s$$

The world price for baseball hats is 7 dollars.

- (1) Initially, what is the number of baseball hats that South Korea imports/exports? How many baseball hats are made by domestic Korean companies?
- (2) What is the consumer surplus? The domestic producer surplus?
- (3) The government wants to protect domestic production of baseball hats and decides to impose a \$1 tariff on foreign baseball hat makers. How does this change the consumer and producer surplus? How much revenue does the government raise? (**Hint:** Make a table with quantities or labeled areas).
- (4) As with most government policies, there are winners and losers from the adoption of tariffs. Using the information from your answer to (3), who favors tariffs: domestic consumers or domestic producers of baseball hats?
- (5) The tariff idea gets shot down by the legislature. So the government decides to implement a quota restricting the quantity of hats that may be imported to 2. What is:
 - a. the quantity of baseball hats produced domestically;
 - b. domestic consumer and producer surpluses; and
 - c. how much is the quota rent?
 - d. What is the main difference between these tariff and quota policies?

Problem 2: The government of Ecuador wants to protect its domestic production of shrimp against foreign competition. The world price is 12 (in millions of dollars). The government sets a target quantity of 4 million pounds of shrimp ($Q=4$). The domestic inverse supply and demand (in millions of pounds of shrimp) is given by:

$$P_d = 23 - Q_d$$

$$P_s = 3 + 3Q_s$$

- (1) If there are no governmental restrictions, what quantity of shrimp will be imported into Ecuador and how many shrimp will Ecuador produce domestically?
- (2) Find a tariff such that 4 million pounds of Ecuadorian shrimp will be sold to domestic consumers, and calculate the resulting change in consumer surplus, producer surplus and government revenue.

Problem 3: The country of Saudi Arabia can produce oil more cheaply than can most other countries. Let the world price of oil be 100 dollars a barrel, and say the domestic supply and demand for Saudi Arabia are given by:

$$P_s = 70 + Q_s, \quad P_d = 100 - \frac{1}{2}Q_d$$

- (1) Assume that Saudi Arabia follows a free trade policy. How many barrels of oil will Saudi Arabia export? What are the domestic consumer's surplus and the producer's surplus?
- (2) What if Saudi Arabia changes its commitment to free trade and decides to close off its oil supply to the world, allowing no oil to leave the country? What happens to consumer and producer surplus?
- (3) In this case, who is in favor of the governmental restriction: producers or consumers?