

For Q1-8, assume the markets for wheat and oil are perfectly competitive.

1. In autarky, Costa Rica can produce wheat for \$25 a bushel. The world price of wheat is \$10 and Costa Rica represents a very small share of world demand for wheat

a. Draw a diagram showing Costa Rica's supply and demand for wheat. Label domestic quantities supplied and demanded under autarky and under free trade and the quantity of wheat imported. Show changes in producer and consumer surplus as a result of the move to freer trade.

b. If wheat production intensively uses land, what should free trade do to the price of land in Costa Rica?

2. Costa Rica imposes a wheat tariff equal to \$10 a bushel.

a. Show in a diagram how the tariff changes the price of imported wheat in CR, the quantities demanded, supplied, and imported.

b. Show what happens to welfare (and its components). Does the tariff raise or lower welfare compared to free trade?

c. Is there anyone in CR who is better off with the tariff than under free trade?

d. What happens to welfare and incomes for wheat exporters?

3. CR lowers its wheat tariff from \$10 to \$5.

a. What is the new price of wheat that clears the market? Does this change in tariffs affect the world price of wheat?

b. Does tariff revenue change? On what does that depend?

For Q4-8, assume that Venezuela has a strong comparative advantage in oil production and the US has a strong comparative dis-advantage. The US represents a large share of world demand for oil.

4. Draw a diagram showing the domestic oil market in Venezuela, and Venezuela's export supply curve for oil.

a. How does the quantity of oil exported depend on world prices?

b. If world demand for oil rises, what will happen to the world price of oil, the quantity of oil supplied and demanded in Venezuela, and the quantity of oil exported.

5. Currently the US imports oil with no tariffs attached. Draw two diagrams, the first showing the US domestic market for oil and the second showing US import demand for oil.

6. Suppose that at the current world equilibrium, the world price of oil is \$75 a barrel. The US raises a \$10 a barrel (non-prohibitive) tariff on oil imports.
- Show what happens to US import demand for oil.
 - What happens to the world price of oil? What is the most / least that oil prices could change?
 - Is the new price of oil in the US market greater than, equal to, or less than \$85?
7. In the US, what happens to domestic oil consumption and domestic oil production?
- Describe the changes in quantities.
 - Make a guess about how the changes in quantity supplied and demanded would come about. That is, how specifically would consumers and producers change their behavior to generate the quantity changes?
 - Would US oil production become more or less efficient at the margin? Would Venezuelan oil production become more or less efficient?
8. Now examine welfare in the US and in Venezuela.
- Who in the US would benefit from this policy? Who would be hurt?
 - Is Venezuela affected by the US tariff? If so, who would benefit, who would be hurt?
 - Is it possible that US welfare could be improved by raising this tariff?
 - Would your answer to 8.c. be the same regardless of the size of the US tariff?

For Q9-10, assume that there are N monopolistically competitive producers of racing bicycles. They face fixed production expenses of \$1 million, and marginal product costs of \$100. The demand curve facing a firm is given by

$$Q = S\left(\frac{1}{N} - .01(P - P_{avg})\right)$$

where P_{avg} = average price of bikes in the market, and $S=100$ million is industry sales.

9. What determines the number of firms on the market and the price they can charge?
- How would a rise in industry sales (S) affect N and P ? Explain.
10. If firms are symmetric (face the same demand and costs), solve for N , Q , and P .