International trade: problem set 6

University College Dublin

Autumn 2017

Consider a country that produces rice. The supply and demand for rice are given by

$$S = 7p_f$$
$$D = 3000 - 3p_c$$

Here p_f is the price that farmers receive, and p_c is the price that consumers have to pay. In the absence of any tariffs we assume that $p_f = p_c$. Under free trade the country can export rice at the world price of $p_w = 500$. Now because of an international food crisis the country's government decides to impose a tariff t on exports to improve national food security.

1. If t increases how will this affect the i) domestice price, ii) consumption, and iii) production?

2. How do consumer surplus, producer surplus, and government revenue change when t increases? What is the effect on general welfare?

3. Is the country better off under autarky compared to the situation where there is trade and a tariff?

4. Let's say that there is a domestic equilibrium with $t = 100$. Instead of this export tariff the government can also opt for quota, which they set to 1,000 units. Calculate how exports, domestic price, production and consumption compare under these two plans and explain which policy is better for the country.

5. The government decides to change policy and is actually going to subsidise exports. Subsidies are given at a rate of s per unit of export. This means that the exporter receives the world price and additionally a s from the government. How does this subsidy affect i) domestic price, ii) consumer surplus, iii) producer surplus, iv) government expenditures on the subsidy, and v) overall welfare?

6. Does there exist an export quota that would have a similar effect as the export subsidy?

7. Could the country be worse off with an export subsidy compared to absence of trade?

8. Suppose that the government wants to the help the domestic rice consumers living in the urban areas. The government can implement either an export tariff or a consumption subsidy (both equalling 100). Which would be the better policy?

9. We know that a tariff will increase producer surplus and decrease consumer surplus in the importing country. Explain why one cannot separate producer and consumer surplus in the general equilibrium models of trade discussed in the course.

10. Is it correct to assume that consumer surplus is worth the same amount as producer surplus or government revenue?