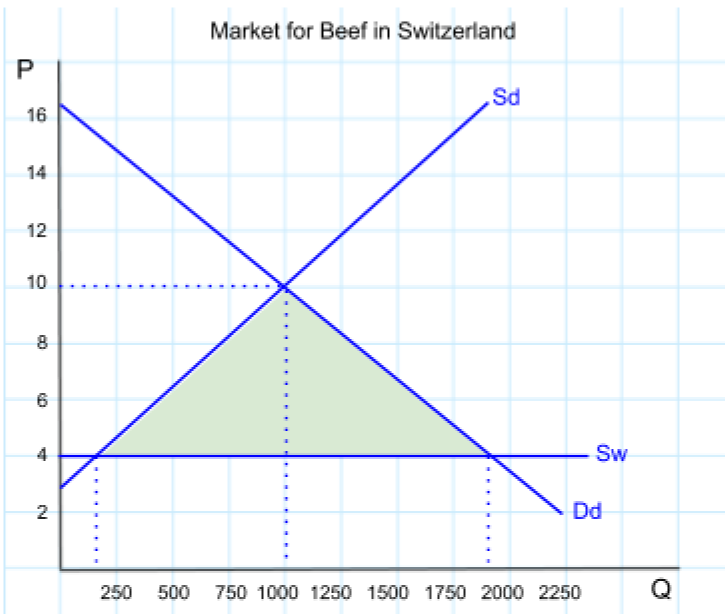
12.1 International trade and protectionism

Introduction: In the previous practice activity, *"The Gains from Trade"*, you were asked why governments might be reluctant to open all their markets to free trade. In this activity you will illustrate and explain the impact that three types of *trade barriers* would have on the domestic markets for a good in a particular country that is practicing *protectionism*.

Part 1 - Tariffs: A tariff is tax placed on an imported good for the purpose of protecting domestic producers of that good from lower-cost foreign producers, or for the purpose of raising government revenue.

1. Assume that Switzerland has a domestic market for beef that, without trade, would supply 1,000 kg of beef per week at a price of $10 per kilogram. In the graph below, show the domestic market for beef in Switzerland without trade.



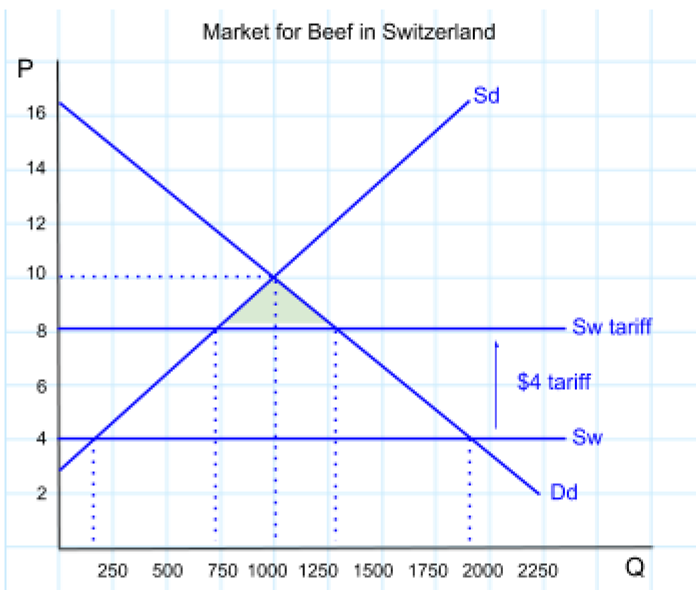
2. Assume that foreign beef producers are able to raise cows at a much lower cost, enabling them to sell their beef for just $4 per kg. Given that there are only 8 million people in Switzerland, it can import as much beef from the rest of the world as it wishes at the world price of $4.
    a. Add a line to your graph above representing the *world supply of beef and the world price of beef.*
    b. Indicate on your graph the quantity that Swiss beef producers will produce at $4, the quantity that consumers will demand, and the quantity of beef that Switzerland will import assuming it opens its beef market to free trade (no values necessary)

    The domestic quantity supplied will be less than 200 kg, while the domestic quantity demanded will be almost 2,000 kg. There will be approximately 1,800 kg of imports after the market opens to free trade.

c. Outline or shade the area that represents the *gains from trade* enjoyed by Switzerland. Who are the winners of free trade in the beef market? The losers? Explain.

Winners?
Swiss beef consumers are the winners because they get to buy more beef at lower prices
Losers?
Swiss beef producers are the losers because they will sell less beef at lower prices

3. Next, assume that the Swiss government decides to *protect* domestic beef producers, so imposes a $4 tariff per kilogram on foreign beef imports. Redraw your beef market diagram from above, this time with a $4 tax affecting the world supply.



4. Referring to your diagram, explain the impact of the $4 tariff on foreign beef on
   a. Domestic beef production in Switzerland

Swiss beef producers respond to the higher price by increasing their output from around 200 kg to almost 750 kg

   b. Domestic beef consumption in Switzerland

The quantity of beef demanded in Switzerland falls from almost 2,000 kg to just over 1250 kg

c. Foreign beef producers and beef imports

Imports decrease from almost 1,800 kg to just over 500 kg. Foreign beef producers are harmed.

d. The Swiss government

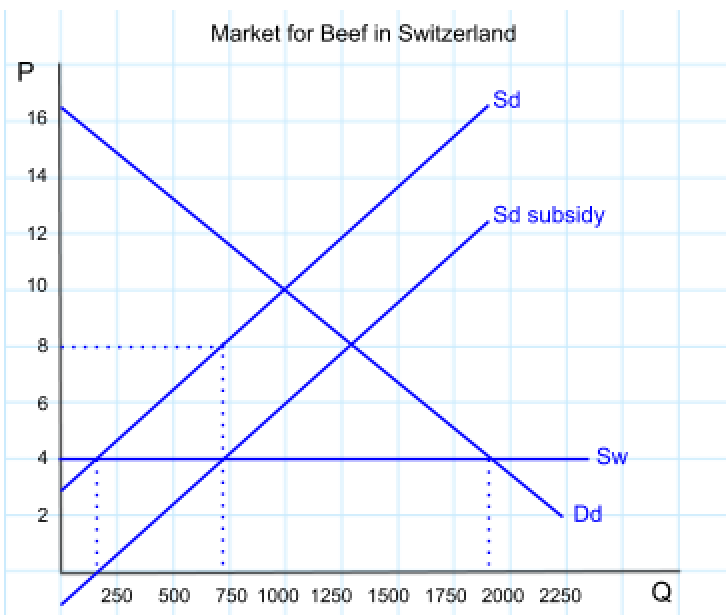
The 500 kg of imported beef is being taxed at $4 per kg, so around $2,000 of tax revenues are generated.

e. Total welfare in the Swiss beef market.

Compared to before the tariff, total welfare is reduced. The gains from trade have now shrunk to the smaller green triangle. While the government and producers are better off, the loss of consumer surplus from the higher price and reduced quantity is greater than the gains to the winners.

Part 2 - Subsidies: A subsidy (defined as a payment from the government to producers meant to reduce costs and increase supply), can be employed for protectionist purposes. A subsidy to domestic producers can increase the domestic supply of a good at the expense of foreign producers and domestic taxpayers (who must pay for the subsidy with their taxes).

5. Redraw the market for beef in Switzerland with free trade from #1 above. Assume the Swiss government grants a $4 per kilogram subsidy to Swiss beef producers (remember, a subsidy shifts the supply curve down vertically by the amount of the subsidy).



6. Explain how the subsidy affects the following:

a. The world price of beef

There is no effect on the world price of beef because the subsidy only goes to domestic producers. Foreign beef is still selling for $4 per kg in Switzerland

b. The quantity demanded by Swiss consumers

Since Swiss consumers can still buy as much beef as they want at the world price, there is no impact on quantity demanded.

c. The amount of consumer surplus

No change in price and no change in Qd means consumer surplus is not affected.

d. The quantity supplied by Swiss producers

Swiss producers, because they receive a subsidy of $4 for every kilogram they produce, increase their production from around 200 kg to almost 750 kg

e. The quantity of imports

Imports of beef decrease from nearly 1,800 kg to around 1,200 kg (the distance from the domestic Qs to the domestic Qd after the subsidy)

f. The revenues of foreign beef producers from trade with Switzerland

Foreign beef producers enjoy lower revenues because the quantity of beef they sell in the Swiss market decreases.

g. Government expenditures on subsidies

The Swiss government spends approximately $3,000 on the subsidy (around 750 kg subsidized at $4 per kg)

7. Referring to your graph, identify
   a. the area that represents the total cost of the subsidy to the Swiss government.

The distance between the original supply and the supply with subsidy represents the $4 per unit subsidy. The quantity produced after the subsidy times the $4 subsidy gives the total cost of the subsidy to the Swiss government.

   b. The area that represents the net change in *consumer and producer surplus*.

There is no change in consumer surplus, but producer surplus increases by the area below $8 and above $4 above the supply curve.

c. Which area is greater?

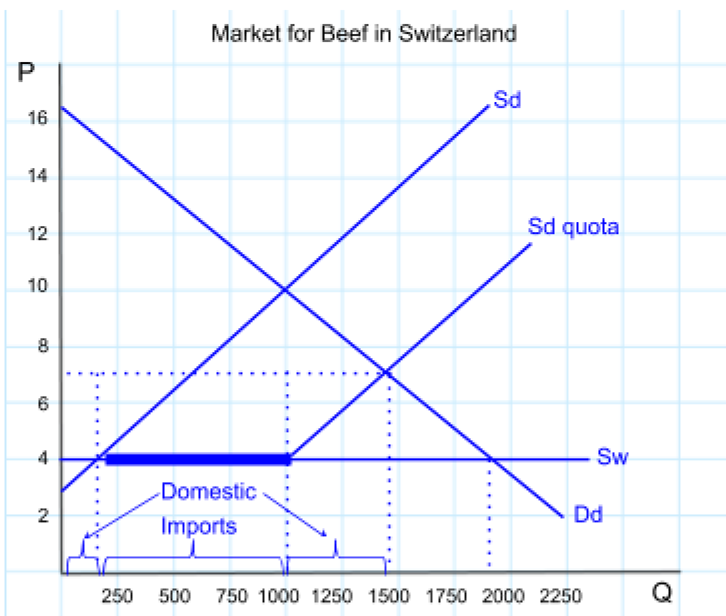
The area representing the cost to the government is larger than the area representing the net increase in producer surplus.

d. Why do protectionist subsidies lead to a net loss of total welfare (DWL)?

Because the cost to the government and taxpayers exceeds the benefit to producers.

Part 3 - Quotas: A protectionist quota is a limit placed by the government on the quantity or volume of an imported good legally allowed to enter the country. When a quota is imposed in a market where free trade was previously taking place, a shortage is created, which drives the equilibrium price up, incentivizing domestic producers to increase their production. The result is a higher price for domestic consumers, a higher quantity supplied domestically, and a decrease in the quantity of imports. Unlike a tax, no revenue is raised for the government, and unlike a subsidy, a quota does not cost taxpayers any money.

8. Redraw the market for beef in Switzerland with free trade from #1 above. Assume the Swiss government imposes a quota on imported beef equal to *half* the amount of beef that would be imported under free trade.



a. Draw a dotted line from a point halfway between the distance representing imports under free trade, up to the world supply curve

b. Identify the area representing the shortage of beef that arises immediately following the imposition of the quota.

The distance from where the quota ends (the thick blue line) and the original Qd represents the shortage

c. What impact will the shortage of beef have on it price in Switzerland?

The shortage of beef will cause the price to rise.

d. From the top of your dotted line from part (a), resume the domestic supply curve, assuming the rising price of beef incentivizes Swiss beef producers to increase their output.

e. What will happen to the domestic quantity demanded for beef as its price rises?

The domestic Qd will decrease as the price rises.

f. Identify and describe from your graph the areas representing domestic producer revenues before the quota, then after the quota.

Domestic producer revenues before the quota was the tiny rectangle between 0 and 200 and up to $4. After the quota, the domestic revenues are represented by two rectangles: from 0-200 and up to $7 and from 1,000 to 1,500 and up to $7. Domestic producers sell more beef at a higher price

g. How does the quota affect total welfare in the Swiss beef market?

Consumer surplus is reduced due to the higher price and lower quantity of beef. Total welfare is reduced