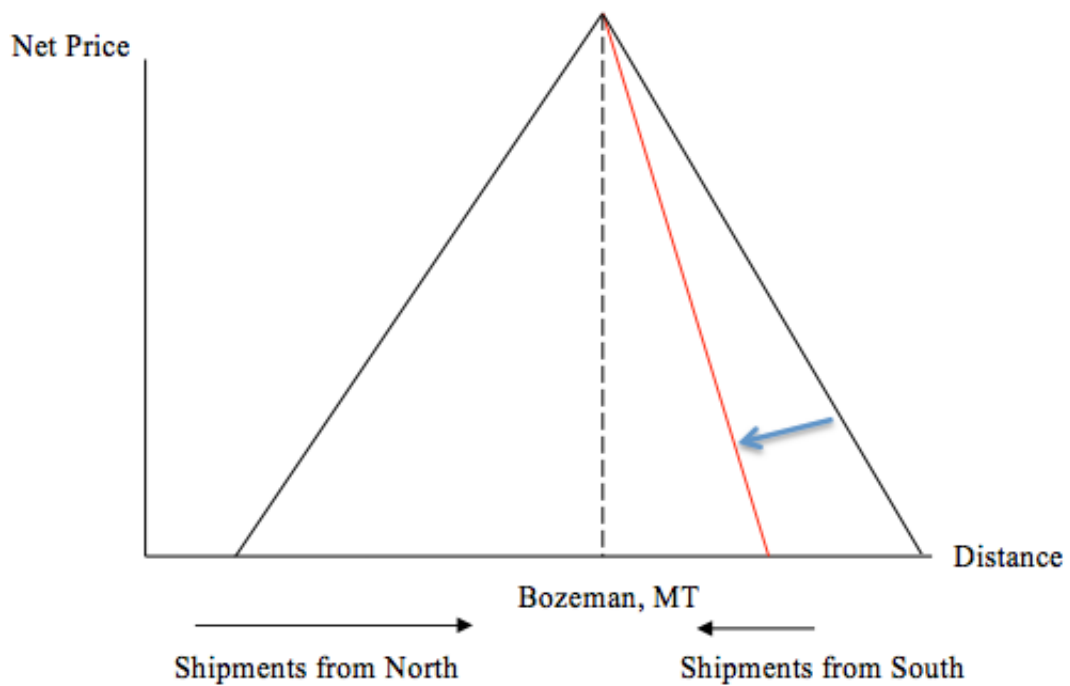


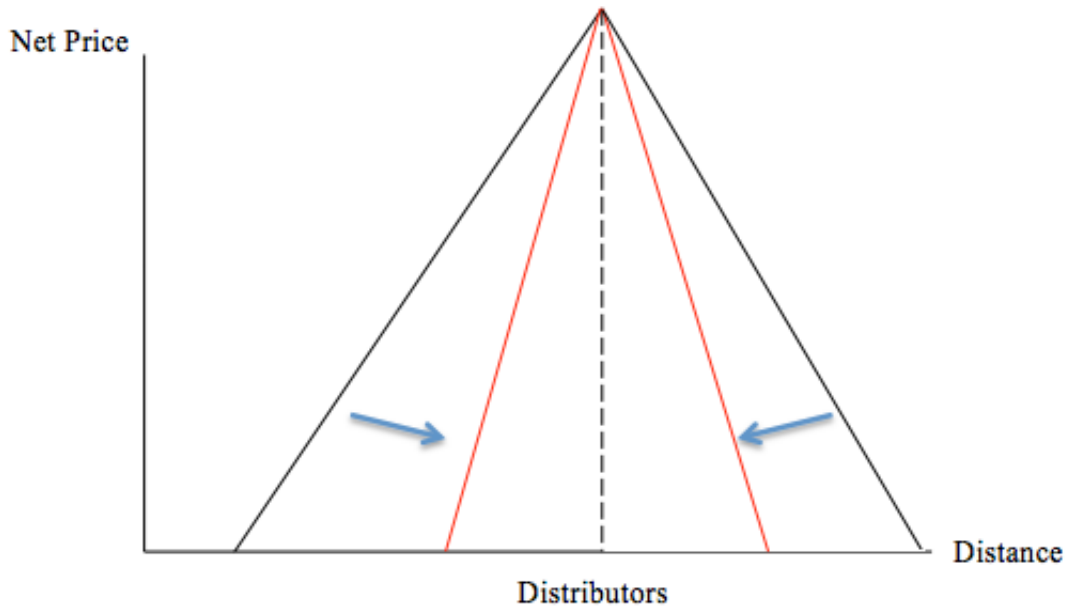
Problem Set 4—Solutions

**Montana tavern owners battling with beer brewers**

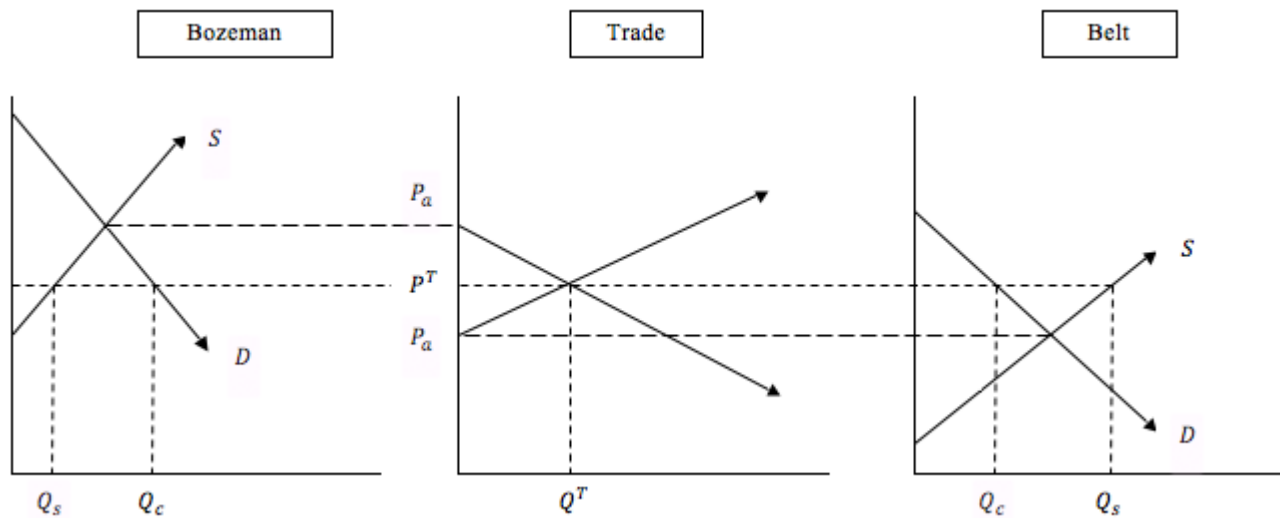
1. See the figure below. We would expect costs for delivering from the south, Colorado, to increase, thus rotating the net price curve inward. The increase in transportation costs raises the marginal cost of supplying macro brew to Bozeman. Thus, one expects a decrease in quantity of macro beer supplied and a relative increase in the amount of local brew sold in taverns.



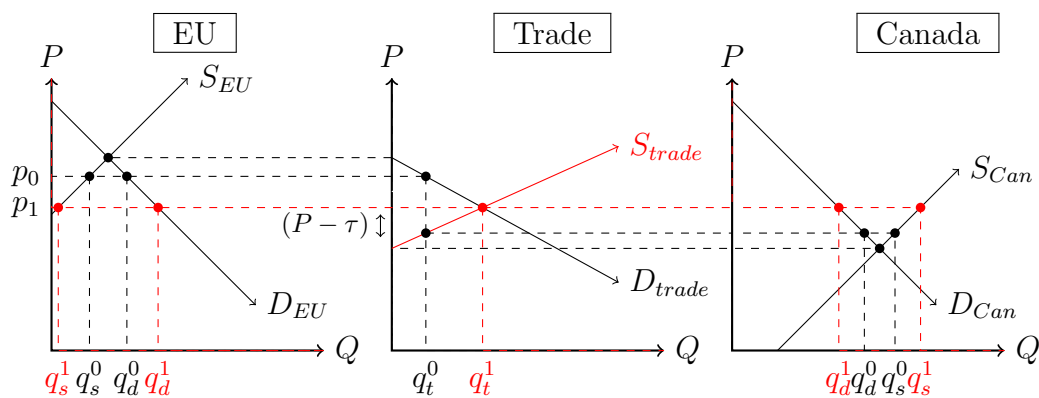
2. See the figure below. The increased transaction costs will increase transportation costs, rotating the net price curves inward. The increased marginal costs per unit of local beer is expected to decrease the quantity supplied from microbreweries, leading to a decrease in the quantity of local brew sold in taverns relative to macro beer.



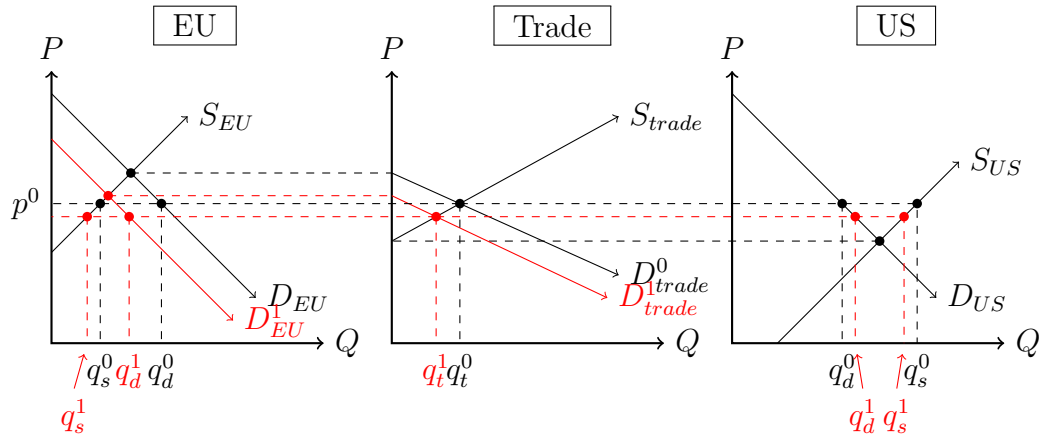
3. See the figure below.



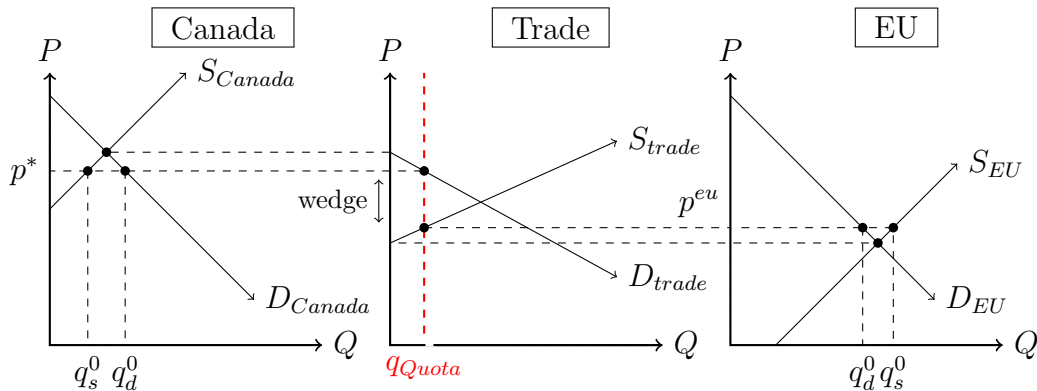
4. Increased demand will shift the curve in the import market outward, which will also shift the excess demand curve outward. This will increase the price and quantity in the trade market. In the import market, producers will be better off, but the effects on consumers is ambiguous. In the export market, consumers are worse off but the producers are better off.
5. The tariff will increase the price of trade and reduce the quantity of trade. In the import market, producers are better off and the effects on consumers is ambiguous (assuming that all tax revenues are redistributed back to consumers). However, there is a deadweight loss. In the export market, consumers are better off and producers are worse off.
6. An Canadian-EU trade agreement.
  - (a) See figure below. Lifting of the European tariffs implies a greater potential for export by Canadian producers. This is expected to lower prices and increase quantity consumed in Europe (but decrease quantity produced in Europe) and increase prices and quantity produced in Canada (but decrease quantity consumed in Canada.)



(b) See figure below. Increased trade with Canada is likely to decrease EU's demand for trade with the United States. That would lower the price received by U.S. producers and decrease their production (but will likely benefit U.S. consumers due to lower prices). If we ignore the increased quantities supplied from Canada to the EU, it would appear as though the EU consumers would be worse off. However, this is a partial equilibrium story and we will not complicate things too much by also introducing Canada.

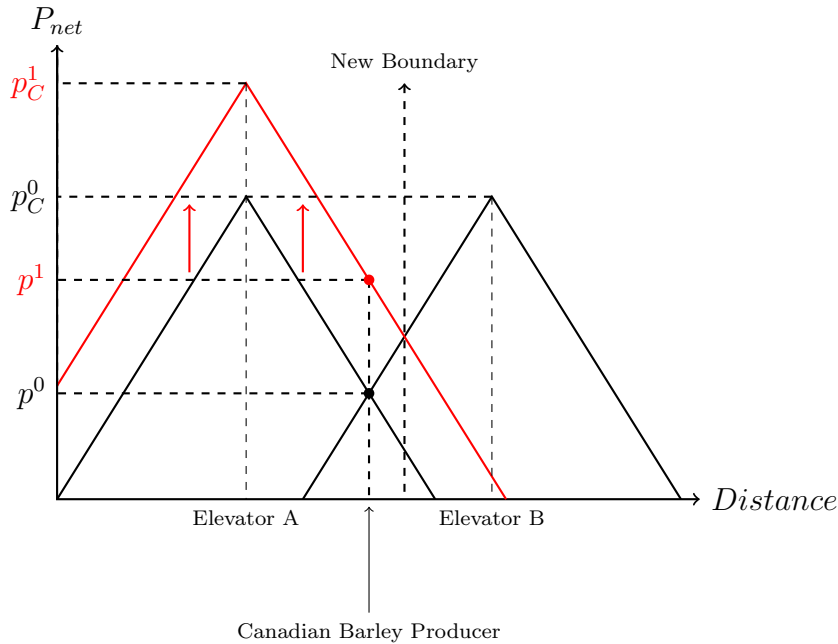


7. A quota to replace a tariff: See the figure below. While the quantity trade will not change, the tariff would create tax revenue for Canada. If the revenues from the tariff are distributed among Canadian producers, they will likely be better off than with a quota. If the revenues are distributed among Canadian consumers, then the consumer surplus would increase. EU producers are just as well off as they were with a quota. There is some deadweight loss, which is welfare that cannot be recovered by either the producer or consumer.



## 8. Canadian Grain elevators

### Overlapping Barley Markets



Assuming that Canada is a net exporter of barley to the EU, the removal of tariffs will increase the price received for barley exported to the EU. In this case, grain Elevator A will be willing to offer more money per bushel of barley,  $p_C^1$ . If the Canadian barley producer was equidistant from Elevator A and Elevator B, and each offered the same price at the elevator prior to the trade agreement, then the producer was indifferent between the two elevators. After the agreement, sale price rises at Elevator A and the Canadian barley producer is better off selling at Elevator A at net price,  $p^1$ . The owner of Elevator B is likely to be worse off, because she cannot market as much barley.