

International Trade

Exercise #2: Oligopolistic models of trade

UNIL - HEC MScE
Matthieu Crozet

Goal

Show how trade of similar commodities can occur between identical countries, in presence of imperfect competition

We will consider a (partial equilibrium) oligopoly, with trade cost and show:

- How trade may append
- The consequence of trade openness on welfare

Build a simple model

Start with a simple model, assuming:

- Two countries
- There is one firm on each country, all produce an homogeneous good
- Each of them can supply the domestic market with no trade cost
- Exports incur a trade cost

Build a simple model

Technical assumption:

- You can choose a quadratic utility function, such that the demand function is linear, e.g.

$$U(X) = aX - \frac{bX^2}{2}$$

- You can assume an iceberg transport cost, so that only a share τ of the quantity shipped across the borders arrives to the destination country ($0 < \tau < 1$)
- Assume Cournot competition

Build a simple model

Technical assumption:

- Of course, you can also have more complex hypotheses if you want:
 - More complex demand function (may be including some product differentiation)
 - Other type of transport cost (per unit, quadratic...)
 - Other types of competition (Bertrand or some kind of oligopoly with conjectural variations)
 - ...

1) What you have to show

1. The sales of each firm on a market, as a function of their production costs and the transport cost
2. The value of transport cost that eliminates international trade
3. The impact of trade openness on prices and profits
4. The consequence of lowering the trade cost on total welfare in a given country (taking into account that trade cost is a net loss for the economy)
5. The consequence of increasing the number of countries on total welfare in a given country

2) Extensions

Do one of the following extension:

- Show the impact of a tariff on the pattern of trade and welfare in the domestic and foreign countries
- Show the impact of a domestic subsidy on the pattern of trade and welfare in the domestic and foreign countries
- Show the impact of an import quota on the pattern of trade and welfare in the domestic and foreign countries

Deadline

November 4th