QUESTIONs - CHAPTER 9 IMPERFECT COMPETITION

Question 9.1
The national electricity markets in the Nordic countries (Denmark, Finland, Norway, and Sweden) used to be protected from foreign competition and dominated by one power company. Between 1996 and 2000 far-reaching reforms were introduced establishing one integrated electricity market. A common power exchange was established (Nord Pool), international transmission links were opened to other players, and border tariffs were abolished. After 2000, the Nordic electricity market was even broadened by establishing trading links with Poland and Germany. We will analyse these developments using the imperfect competition framework of Markusen by concentrating on the Swedish national electricity market.

9.1A Illustrate the Swedish electricity market before 1996 in a graph, with the amount of electricity on the vertical axis and the amount of ‘other products’ on the horizontal axis. Draw the production possibilities frontier and the utility curve for which consumers maximize their utility. Indicate clearly the amount of electricity sold and its price.

9.1B Why can the Swedish monopolist charge an electricity price far above marginal cost? Is it ‘fair’ to charge a price above marginal costs?

9.1C Assume that Sweden first established an integrated electricity market with Norway.1 Draw the new situation. What happens to the amount of electricity offered and the electricity prices on the Swedish market?

9.1D Who are the winners and who are the losers from the integrated electricity market with Norway? Explain.

9.1E What happens to the figure if more countries enter the common electricity market? Is this an attractive development?

Question 9.2
Let us analyse the gains and losses associated with the entry of the Norwegian electricity firm on the Swedish market more formally (see question 9.1D). Recall that there was initially only a Swedish monopoly producer on the Swedish electricity market. In the new situation a

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1 This is partly true because the existing electricity exchange in Norway (Stattnet Marked), which was later transformed into the common exchange Nord Pool, was first opened to Swedish players and only later to others.
Norwegian firm is also allowed to sell electricity in Sweden. Assume that Figure 9.2 in the main text gives the demand for electricity in Sweden and the marginal revenue and cost curve for the Swedish monopolist in the initial situation.

9.2A Copy Figure 9.2 from the main text. What are the consumer surplus and producer surplus in a situation of monopoly?

9.2B Indicate in the same figure a possible total quantity of electricity supplied and the associated price level if the Norwegian firm is allowed to compete on the Swedish market, assuming that there are no transport costs. What is the consumer surplus and producer surplus in this new situation?

9.2C Who gains and who loses from the entry of the Norwegian firm? What are the pro-competitive gains from trade?

Assume now that the Norwegian firm faces positive transport costs when delivering electricity to the Swedish market. We suppose that it is still profitable for the Norwegian firm to supply electricity to Swedish consumers.

9.2D What is the quantity of electricity supplied and the associated price level if the Norwegian firm faces positive transport costs?

9.2E Who gains and who loses from the entry of the Norwegian firm if there are positive transport costs? Explain whether the gains and losses are equal to the situation without transport costs.

Question 9.3
The integration of the electricity markets in Nordic countries after 1996 should lead to pro-competitive gains from trade. The figure below, however, shows that Sweden’s electricity imports do not show an upward trend after 1996.
Sweden’s electricity imports 1990–2002

![Graph of Sweden's electricity import 1990-2002](image)

Source: Swedenergy.

9.3A Explain whether pro-competitive gains from trade may arise even though imports do not increase.

9.3B What alternative indicators can be used to evaluate whether Sweden has gained from the increase in competition in the electricity market?

Question 9.4

We leave the electricity market but stay in Sweden. The table below shows the main providers of bottled still water in Sweden.

Table: Main providers of bottled still water in Sweden (May 2001)

<table>
<thead>
<tr>
<th>Provider</th>
<th>Price/liter (Swedish crown)</th>
<th>Market share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imsdal (Norway)</td>
<td>12.02</td>
<td>44%</td>
</tr>
<tr>
<td>Blåvitt (Sweden)</td>
<td>6.26</td>
<td>19%</td>
</tr>
<tr>
<td>Evian (France)</td>
<td>13.15</td>
<td>15%</td>
</tr>
<tr>
<td>Vittel (France)</td>
<td>10.78</td>
<td>11%</td>
</tr>
</tbody>
</table>

Source: Friberg and Ganslandt (2005)
9.4A  Do you think bottled still water is a homogeneous good? Explain whether the Swedish market for bottled still water is characterized by perfect or imperfect competition.

9.4B  Friberg and Ganslandt\(^2\) report that shipping 1½ liters of water for 1000 kilometers costs 1.02 Swedish crown. Do you think it is efficient to ship bottled still water all the way from France?

**Question 9.5**

Historically, the market for electricity is characterized by oligopolistic firms. Since the 1990’s the European Commission tries to make the national electricity markets of its members more competitive. The Excel file for question 9.5 contains data on the electricity markets of the EU member states. We are going to analyze how successful the efforts of the European Commission have been.

9.5A  Describe which member states have reformed most fully in order to allow their citizens to choose energy suppliers themselves. Describe also in which member states most suppliers are active and which member states are most actively trading electricity.

9.5B  Is regulatory reform correlated with the number of suppliers on the electricity market and electricity trade?

9.6C  Are the number of suppliers and trade correlated to electricity prices?

9.6D  What do you conclude from the analysis above? Should the European Commission push for further reforms in the European electricity market?

**Question 9.6**

The Excel file for question 9.6 allows you to play with the reciprocal dumping model. There are two firms, A and B. In the reciprocal dumping model of Chapter 9 it is assumed that both firms face the same marginal costs. The simulation is slightly more flexible in this respect as it allows for a difference in marginal costs. Firm A produces for the home market and firm B is situated abroad. Firm A therefore does not face transport costs while firm B does. Note that the transport costs are of the iceberg type.

9.6A Why does firm B not offer its products on the home market even though its marginal production costs are lower?

9.6B What options does firm B have to introduce its product on the home market of A?

9.6C One of the options of firm B is to lobby for a road so that transport costs will decrease. What effect does a decrease in transport costs have on the quantities supplied and the price?

9.6D Who gains and who loses from a decrease in transport costs?

9.6E How does welfare of country A, of country B and total welfare change? Do you think building a road is attractive for the government of country A?