

# **INTERNATIONAL TRADE AND THE WORLD ECONOMY**

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## **Answers to \* exercises in chapter 2 of the Study Guide**

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The \* exercises in chapter 2 are: 2.5 and 2.6.

### **Question 2.5**

2.5A.

The theory of Adam Smith predicts that countries will specialise in the production of goods in which they have a technological advantage. Since they can produce such goods cheaply, they are exported in exchange for goods with a technological disadvantage.

The German industries with the relatively best export performance are the Industrial Chemicals and Metal Products sector. These industries are characteristic of the German manufacturing sector, which is very strong in producing capital goods. The high Balassa scores for these sectors are fairly constant for the entire period of observation. Directly applying Adam Smith's theory leads us to conclude that Germany has a technological advantage in the Industrial Chemicals and Metal Products sectors.

The Portuguese top sectors are Footwear and Pottery. The Balassa index for these sectors has risen quite strongly over the years. Apparently the Portuguese have gained a significant cost advantage over other OECD member states over the years. Applying Adam Smith's theory would lead us to conclude that the Portuguese have developed a technological advantage in the Footwear and Pottery sectors, compared to the group of reference countries.

2.5B.

There are at least two reasons for the observed stability over time of the Balassa index. First, the Ottens data base identifies only 28 manufacturing sectors. The level

of aggregation is therefore very high. Since the export performance is measured using a relatively broad group of industries this makes large fluctuations over time less likely. Second, the observed stability of the Balassa index, which measures revealed comparative advantage, illustrates that it takes considerable time and effort to build up a structural comparative advantage over other countries. Once such an advantage is established it is not easily "lost" to other countries, which would have to invest considerable time and effort to surpass the technological level of the current leader.

### 2.5C.

Focusing solely on a country's exports for identifying a strong sector ignores possible substantial simultaneous import flows in the same sector. An industry that exports a lot but imports even more can still obtain a high Balassa index. Industries where a lot of re-exporting takes place may derive their high index from a strong transport industry, and not from technology advantages within this industry.

### Question 2.6

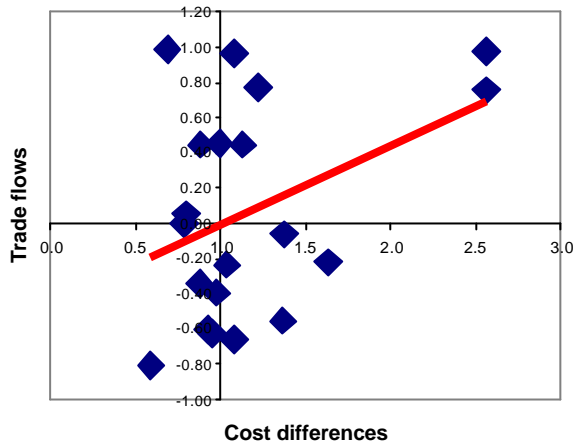
The data of table 2.4 can for example be represented in a scatter diagram. On the vertical axis we have put the relative US net trade with Japan as follows:

$$\frac{\text{Exports} - \text{Imports}}{\text{Exports} + \text{Imports}} \text{ for every industry.}$$

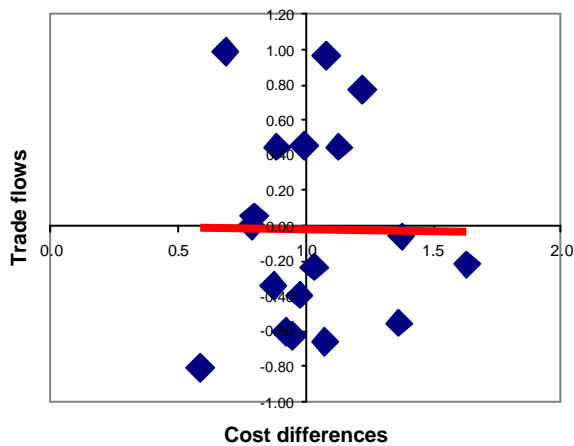
On the horizontal axis we can put the productivity of the different US industries relative to the same industries in Japan.

$$\frac{\text{Value added per worker in the US}}{\text{Value added per worker in Japan}} \text{ for every industry}$$

Plotting this in a scatter diagram gives us the following result:



The absolute-cost-advantage theory seems to be somewhat supported by the data, that is there is a positive relationship between absolute cost advantages and exports. This result is however mainly established by two outliers (the tobacco and wearing apparel & leather industries showing a high absolute cost advantage). When we leave these out we are left with a diagram that shows no relationship between absolute cost advantages and exports.



Apparently it is very difficult to explain trade solely by absolute cost differences. Fortunately, chapter 2 is not the final chapter of the book.