

Chapter 5 Factor Prices

Question 5.4

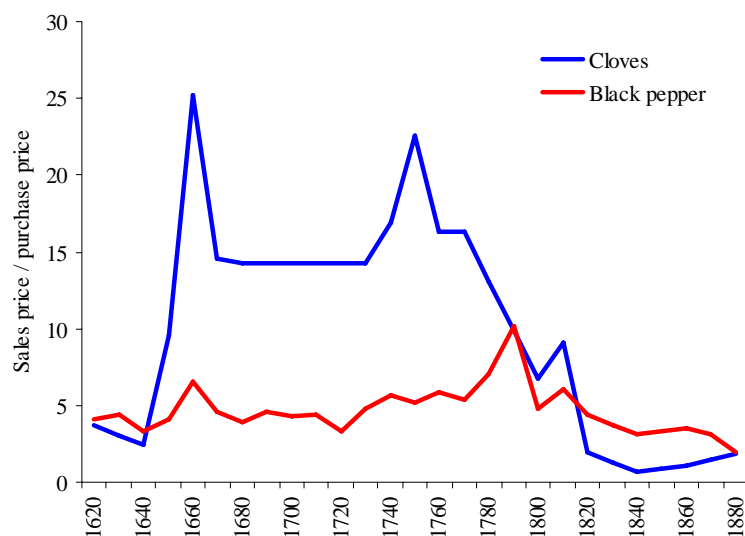
The Stolper-Samuelson proposition is often used when analyzing groups which press for trade protection. It is said that the scarce factor of production should favour protection and the abundant factor free trade.

- 5.4A Explain with the help of the Jones Magnification Effect why the scarce factor of production should favour protection and the abundant factor free trade.
- 5.4B Can you explain why during the 19th century the industrial north of the US wanted free trade and the cotton industry in the south protection from trade (which consequently resulted in the American Civil War)?
- 5.4C Can you now also explain why many labour unions in developed countries favour protection from trade? And why many dictators in developing countries also favour protection?

Question 5.5

It is conventional wisdom that there was a trade boom following the voyages of discovery by Christopher Columbus, Vasco da Gama and their followers. According to many historians this trade boom can be explained by declining barriers to trade and declining transport costs between Europe and the overseas continents. In their paper “After Columbus: Explaining the global trade boom 1500-1800” K.H. O’Rourke and J.G. Williamson challenge this view. They assert that the trade boom cannot be explained by an increasing integration of world markets but that other factors are at work. The figure below is taken as a proof for their assertion. It shows the markup the Dutch East India Company demanded for clover and black pepper between 1620 and 1880.

Figure: Spice markups 1620-1880 (Amsterdam vs. Southeast Asia)



Source: O'Rourke & Williamson (2001)

- 5.5A Search the internet for why the Dutch East India Company was able to raise the markup on cloves between 1650 and 1800 (and not on black pepper)?
- 5.5B Explain why the figure proves that during the 17th and 18th century world markets did not integrate?
- 5.5C Which other factors can explain the trade boom after the voyages of discovery?

Question 5.6

If the price equalization proposition holds, one would expect that wage rates move in unison or at least have a tendency to converge for countries that trade intensively with each other. Let's see if this is true for Canada and the United States. Search the internet for wage data. Use these data in a graph to illustrate whether the factor price equalization proposition holds.

Wage data for Canada and the US are available at the following websites:

- The International Labour Organisation (www.ilo.org/), a specialised UN agency. See for example the "LABORSTA" database.

- The Bureau of Labour Statistics (stats.bls.gov/) for the US.
- Statistics Canada (www.statcan.ca/) for Canada.

Take care to denote the wages in the two countries in the same currency. Exchange rate data are available at the following websites:

- Pacific exchange rate service (fx.sauder.ubc.ca/)
- FRED II database of the Federal Reserve Bank of St. Louis (research.stlouisfed.org/)

Question 5.7

The **simulation file of question 5.7** repeats the Lerner diagram drawn in figure 5.4. We have assumed initially that capital's share for manufactures is 80% and for food 20% ($\alpha_m = 0.8$ and $\alpha_f = 0.2$).

Furthermore, the wage rate w and rental rate r are equal to $w = r = 0.2$. The simulation allows you to change the wage rate and the rental rate.

- 5.7A What is the capital intensive and what the labour intensive good in the simulation? Explain in two different ways.
- 5.7B The Lerner diagram pictures the unit value isoquants of manufactures and food. Why is the production of manufactures and food not equal to unity?
- 5.7C If you increase the wage rate, what happens to the prices of manufactures and food? What happens to the labour input and capital input? Explain.
- 5.8D Fill in the table below by changing the wage rate in the simulation while keeping the rental rate equal to 0.2. Comment on the evolution of the final goods prices and factor inputs.

Wage rate	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
Price manufactures									
Price food									
Labour input man.									
Capital input man.									

Question 5.8

We will again analyze the Lerner diagram. Instead of deriving final goods prices from factor prices, the **simulation of question 5.8** derives factor prices from final goods prices, as in the Stolper-Samuelson proposition. Initially, we assume $\alpha_m = 0.8$, $\alpha_f = 0.2$, $p_m = 0.3$, and $p_f = 0.3$.

- 5.8A Increase the price of manufactures in the simulation. What happens to the wage rate and rental rate? What happens to the factor inputs? Explain.
- 5.8B Fill in the table below by changing the price of manufactures while keeping the price of food stable at 0.3. Comment on the development of the factor prices and factor inputs.

Price of man.	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
Wage rate									
Rental rate									
Labour input man.									
Capital input man.									

Question 5.9

Prices are not the only exogenous variables in the model of chapter 5. The factor intensities (alpha) are also given. This question analyzes the impact of changing the factor intensities for factor prices and final goods prices using both simulations of questions 5.7 and 5.8.

- 5.9A Fill in the table below while assuming that final goods prices remain constant and $\alpha_m = 0.8$. Comment on the development of the factor prices.

Alpha food	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
Wage rate									
Rental rate									

- 5.9B Fill in the table below while assuming that factor prices remain constant and $\alpha_m = 0.8$.
Comment on the development of the final goods prices.

Alpha food	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
Price manufactures									
Price food									