

## Exercise 3

**Problem 1:** A country's output vector is  $X = (2, 2, 1)$ , the world's output vector is  $X^w = (55, 100, 110)$ , the price vector is  $p = (4, 4, 3)$ , and the commonly used input output coefficients are

$$\begin{pmatrix} 1 & 2 & 1 \\ 1 & 1 & 1 \\ 2 & 1 & 1 \end{pmatrix}$$

where the first row describes labor coefficients, the second row describes land coefficients, and the third row describes capital coefficients. All countries have identical homothetic preferences and balanced trade.

- Describe the country's pattern of commodity trade.
- Describe its pattern of trade in factor content.
- What are the equilibrium factor prices?

**Problem 2:** Carry out the empirical exercises that you find at the end of chapter 2 in the Feenstra book. You can download the data and stata do files at this URL:

<http://cid.econ.ucdavis.edu/Books/Graduate/Chapter-2.zip>

**Problem 3:** Consider the new trade Dixit-Stiglitz monopolistic competition model à la Krugman (AER 80).

- Solve the theoretical problem 5.2 in the Feenstra book.
- Solve the model in Krugman AER 80 for the equilibrium number of firms.
- Analyze how the integration of two equally sized (i.e.  $L = L^*$ ), formerly autarkic countries affects the number of firms in each country, the total number of products available, and the utility of consumers.