

Guide for the external sensor.

Final exam International Economics SFB 11615
at Østfold University College on May 11, 2022.

The Final Exam consists of two relatively structured questions and two relatively unstructured questions.

Exercise 1: The student must know the difference between absolute and comparative advantage and which of these two concepts is useful in determining the patterns of international trade.

- a) Brazil has an absolute advantage in the production of beer.
- b) Brazil has an absolute advantage in the production of pizza. So Brazil has an absolute advantage in producing both products. In the following it will be shown that each country, Brazil and Argentina, has a comparative advantage in the production of one of the goods.
- c) Argentina has a comparative advantage in producing beer. This is typically shown by using the ratios of labor input requirements (beer in numerator) in the two industries in the two countries, leading to an inequality, but it can also be shown by the slopes of carefully drawn diagrams.
- d) Brazil has a comparative advantage in pizza production. (This time the labor input requirement for pizza is in the numerator of the ratios)
- e) The comparative advantage is used to determine who exports what and who imports what. So Argentina will export and produce beer and Brazil will produce and export pizza. Note that the Ricardian model produces corner solutions, i.e. complete specialization.

Exercise 2: This exercise deals with relative prices and the gains from trade in a Ricardian Model.

Numerical values for the total amount of labor in Argentina and Brazil as well as the unit labor requirements in the beer and pizza industry for both countries are given.

- a) Argentina will produce two million kegs of beer, obtained by dividing the total Labor amount available in Argentina by the unit labor requirement in Argentina for beer production. This is the number of kegs of beer if all of Argentina's labor is put into the beer industry.
- b) Argentina 3 million kilos of pizza if all labor is put into the pizza industry.
- c) Brazil produces 2 million kegs of beer if all labor is put into the beer industry.
- d) Brazil will produce 5 million kilos of pizza if all labor is put into the beer industry.

The answers to (e)-(h) deal with relative prices as ratios of the labor input requirements as well as numerically under the condition of 'NO trade'. The student is expected to understand that in the absence of trade it is simply the ratio of labor input requirements that determines the relative prices.

e) f) Relative price of beer in Argentina: $3/2$. Relative price of pizza in Argentina: $2/3$.

g)h) Relative price of beer in Brazil: $5/2$. Relative price of pizza in Brazil: $2/5$.

i) From exercise 1 we know that Argentina specializes in production and export of beer; Brazil specializes in production and export of pizza.

It now requires to use the world trade exchange relation and exporting one good in comparison with producing both goods in each country (no trade) to show that both countries gain from trading with each other and specializing in producing the good in which they have a comparative advantage.

Exercise 3: This exercise deals with the concept of a tariff, a large country and a small country. It can be answered with the use of graphics or precise language or a mixture of both. The upshot is that a large country may gain from a tariff that it imposes under certain circumstances. A small country imposing a tariff will not gain from it. The analysis abstracts from retaliation. The circumstances under which a large country gains are: the efficiency losses (production distortion loss and consumption distortion loss) are smaller than the terms of trade gain.

The exercise expects the student to describe what is going on in both countries: The tariff imposing country and the tariff target country. Also it is desirable to go to the level of producers and consumers in both countries. The use of the concepts of producer surplus and consumer surplus is desirable.

Exercise 4: Here we work with increasing marginal cost of production. Everything is graphically given. It needs to be interpreted. What do we learn from the graphs?

We see the situation before trade opens up. In this case: production = consumption and it is a point on the production possibilities frontier. It is denoted S_0 .

We see that as trade opens up production no longer equals consumption (C1 and S1 are two different points) the graphs show gains from trade. The gains can be shown in different ways:

- Consumers in both countries reach a higher indifference curve
- Consumption happens outside the production possibilities for both countries. They are consuming a mix of goods that would not be possible in autarky.
- Total quantities produced worldwide are larger when countries open up for trade. (More wheat is produced worldwide and the same amount of cloth)

It is possible to compute exports and imports for each country. The USA exports wheat and imports cloth. ROW exports cloth and imports wheat. Exports and imports are calculated from the discrepancy between C_1 and S_1 .

The USA exports $80-40=40$ units of wheat ($S_1 - C_1$). The USA imports $60-20=40$ units of cloth. (C_1-S_1).

ROW exports $100-60=40$ units of cloth (S_1-C_1). ROW imports $55-15=40$ units of wheat. Imports of USA are exports of ROW and vice versa.

Relative prices are shown as downward sloping lines with points of tangency. First, before opening up for trade both countries have their national prices, which differ from each other. After the countries open up for trade there is one shared world price for each good and one world trading relation. Note that the common world relative price ratio lies in between the two national (pre-trade) price ratios.

$$0.67W/C < W/C < 2W/C$$