

International Economics  
Econ 4401  
Homework 1 (**Revised Version**)

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**Question 1. *Exchange Economy.***

This question studies the trading patterns between two countries with different endowments and different preferences. Suppose there are two countries, Home and Foreign. They are endowed with different amounts of two goods, Wheat (W) and Corn (C). The countries have the following preferences. Home has utility function of the form

$$U(W, C) = \frac{1}{2} \log W + \frac{1}{2} \log C$$

The Foreign country, on the other hand, has the utility function

$$U(W^*, C^*) = \frac{1}{3} \log W^* + \frac{2}{3} \log C^*$$

Endowments are as follows: Home has 100 units of wheat and 70 units of corn, while Foreign has 50 units of wheat and 80 units of corn. Normalize the price of corn to one. We will only be interested in the relative price of wheat to corn, which we will denote  $p$ .

- (a) [5] Find the autarky price of wheat relative to corn in the Home country.
- (b) [5] Find the autarky price of wheat relative to corn in the Foreign country.
- (c) [5] Compare autarky prices in the two countries. In which country is the price of wheat higher relative to the price of corn? Explain why that is (cite the factors that determine these autarky prices).
- (d) [5] Find the price of wheat relative to corn when countries open up to trade.
- (e) [5] What is the pattern of trade between the two countries? Which country exports wheat? Which country exports corn?
- (f) [5] Show that if there is no redistribution of income, winners and losers both exist in each country.

**Question 2. Comparative Advantage.**

Two countries, Home and Foreign, use one factor, labor, to produce two goods, Shirts (S) and Notebooks (N). The Home country can produce Shirts with one unit of labor and Notebooks with two units of labor. The Foreign country can produce Shirts with 3 units of labor and Notebooks with 4 units of labor. Home country is endowed with a labor force of 200 units, while the endowment for the foreign country is 100 units. Preferences in each country can be described by the following utility function:

$$U(N, S) = \log N + \log S$$

- (a) [5] Which country has an absolute advantage in producing Shirts? Which country has an absolute advantage in producing Notebooks?
- (b) [5] Which country has a comparative advantage in producing Shirts? How is this relevant in determining the pattern of production in a world where the countries can trade? Explain.
- (c) [5] What is the pattern of production and consumption in the Home country in autarky?
- (d) [5] What is the pattern of production and consumption in the Foreign country in autarky?
- (e) [10] Now consider the case where the two countries are allowed to trade. Find the world equilibrium price. Do both countries specialize? What is the pattern of trade?

**Question 3. Autobiography.**

Write a short (100-150 word-) autobiography detailing your background and interests, highlighting any experiences you may have had overseas. Think about how international events have helped to shape your own life experiences and explain how international economic activity impact what you do today [10].

**Question 4. Trade Data.**

For each of the following countries: the US, South Korea, China, Mexico, Canada, Germany, Brazil, Australia, Spain, and South Africa, compute the following statistics (and present them in a table) using data gathered from the online sources listed on the class website: (1) net exports-to-GDP ratio, (2) GDP per capita, and (3) population, both in 1990 and in 2005. Given these statistics, what can you say about the volume of trade for these countries? Has trade grown over time? Do richer (i.e. higher GDP per capita) countries trade more? Do bigger countries (i.e. those with larger population) trade more? Explain [30].