

Problem Set 1
Due date to be Announced

Ricardian Model and Comparative Advantage

(I) Analyze the following two countries with linear (constant opportunity cost) production functions. The production technology is given by the following unit labor coefficients:

	United States	Thailand (*)
Rice	3	4
Computers	1	3

Each coefficient indicates the number of hours of labor needed to produce a commodity in a given country.

The total labor endowment in each country is 24 hours and consumers like both commodities.

(1) Graph the PPFs for the US and Thailand on two graphs (put Rice on the vertical axis).

(2) Answer the following question. **Justify briefly each of them.**

Which country has the absolute advantage in producing Rice?

Which country has the absolute advantage in producing Computers?

Which country has the comparative advantage in Computer production?

Which country has the comparative advantage in Rice production?

(3) What was the autarky relative price Computers in terms of Rice (P_C/P_R) in the US? In Thailand?

What is the range of free trade relative prices of Computers in terms of Rice that could support free trade (i.e. an equilibrium with a positive volume of imports and exports from both countries) between the two countries?

(4) Suppose that after free trade occurs between the two countries, the relative price of Computers is $\frac{1}{2}$ (i.e. $P_C/P_R = \frac{1}{2}$). On a new graph for each country show the following information (remember to put Rice on the vertical axis).

Production and consumption allocations for each country (label them P, C and P*, C*)

Imports and exports for each country.

(5) Did the two countries enjoy welfare improvements or losses as a result of free trade? Justify (i.e. compare the level of utility in Autarky and Free Trade)

Productivity changes: Technological improvement

(II) For Thailand, suppose that new methods of production are discovered that double the marginal productivity of labor in each sector (i.e. multiply MPL^*_R for two, and multiply MPL^*_C by two). Will the pattern of trade specialization and trade change? (i.e. will countries continue to specialize in the same commodity and will the commodities imported and exported remain the same?)

Welfare, Wages and Average Costs:

(III) Answer the following questions.

(1) In autarky, what is the real wage in terms of Computers and the real wage in terms of Rice in the US? In Thailand?

(2) After free trade arises, what is the real wage in terms of Rice and the real wage in terms of Computers in the US? In Thailand?

(3) Suppose now that free trade occurs at the free trade prices given earlier and in fact, assume $P_C = 1$. What is the average cost of Rice and the average cost of Computers in the US? In Thailand?

(4) Comparing countries, which country has higher wages? What do you notice about the relationship between trade and average cost? Discuss how these issues correspond to the article "Not So Absolutely Fabulous" The Economist, 4-11-95.