

Problem Set #5Due Wednesday 4/20/11 by 6 p.m. in the Econ 110-1 slot in the Economics Alcove

Use a stapler! Write legibly and use full and grammatically correct sentences in your answers. Draw graphs neatly and label axes and points clearly. Show your work on calculations. Each part below is weighted equally in grading, as are subparts within a part.

A. International trade:

The following table shows the amounts of guns and butter than can be produced with one hour of labor in America and France:

	<u>America</u>	<u>France</u>
guns	16	6
butter (pounds)	20	12

- 1)
 - a. Calculate the opportunity costs of guns and butter in America and France.
 - b. Which country has the absolute advantage in guns? In butter?
 - c. Which country has the comparative advantage in which good? Explain exactly how you figured this out.
 - d. Does this mean that America and France will necessarily trade? If you answer no, explain why not.
- 2)
 - a. Draw the production possibility frontier for each country, assuming that there are 400 labor hours available in America and 120 labor hours in France.
 - b. Add the maximum consumption possibility frontier to your graph for each country.
 - c. On a new graph, draw the production possibility frontier that would theoretically occur if America and France unified into one country called FrancoAmerica.
 - d. If FrancoAmerica really came into being, would you expect its production possibility frontier to lie inside or outside the one you drew in c.? Explain your reasoning. Would you expect the production possibility frontier to change after fifteen years of this new country's existence, and if so, in which direction? Explain your reasoning.

- A. 3) Two countries, Drossneria and Ringoenistan, both produce and consume bushels of wheat.

Drossneria: $Q_S = 10P$ and $Q_D = 150 - 10P$

Ringoenistan: $Q_S = 10P - 100$ and $Q_D = 250 - 10P$

- a. Solve for price and quantity for Drossneria assuming no international trade.
 - b. Do the same for Ringoenistan.
 - c. Draw two graphs side by side showing the wheat market in each country.
 - d. If the two countries trade, which country will export wheat? How did you know?
- 4) a. Add the two demand curves together to get total demand. Add the two supply curves together to get total supply.
- b. Solve the two equation system in **a.** for the price and total quantity produced (and consumed) that will occur under trade.
 - c. What is the quantity demanded in each country? What is the quantity supplied by each country? How many bushels of wheat will be exported?
 - d. Show the trade price and the quantity exported (and imported) on your graphs from **3c.**

B. Exchange rates:

1) a. The following table shows some foreign exchange rates as of April 13, 2010:

<u>currency</u>	<u>Price</u>	
	<u>dollars per unit of foreign currency</u>	<u>foreign currency per \$1</u>
Euro	1.3583	_____ (€/\$)
Peso (Mexico)	0.0820	_____ (_____)
Renminbi/Yuan (China)	0.1465	_____ (_____)
Yen (Japan)	0.0108	_____ (_____)

Fill in the last column of the table with the reciprocal price of the U.S. dollar in terms of each foreign currency, including writing down the relevant units in the parentheses.

b. Now find the foreign exchange rates in U.S. dollars for these currencies as of a date in April 2011 (specify the date and source that you use):

<u>currency</u>	<u>Price (April ??, 2011)</u>	
	<u>dollars per unit of foreign currency</u>	<u>appreciated/depreciated?</u>
Euro		
Peso (Mexico)		
Renminbi (China)		
Yen (Japan)		

Fill in the first column of the table with the foreign exchange rates. In the second column, indicate for each currency whether it has appreciated or depreciated relative to the dollar since April 13, 2010

2) What happens in the currency markets for U.S. dollars and Euros with the following changes? Sketch the graphs and describe what happens:

a. A huge fad breaks out in Europe for Apple iPads.

b. The German economy undergoes a long and deep recession.

C. Suppose the following set of equations characterizes a large open economy:

$$C = 0.5(Y - T)$$

$$S = Y - T - C$$

$$I = 2000 - 100r$$

$$NX = 500 - 500e$$

$$G = 1500$$

$$CF = 100r$$

$$T = 1000$$

$$Y = C + I + G + NX$$

$$Y = \bar{Y} = 5000$$

$$NX + CF = 0$$

- 1) a. Solve for the equilibrium values of r and e .
b. What are the equilibrium values of C , I , S , NX , and CF ?
- 2) a. If G rises to 2000, solve for the new equilibrium values of r and e .
b. Now what are the equilibrium values of C , I , S , NX , and CF ?
c. Verify that $NX = (S - I) + (T - G)$
d. Explain in words what happened to the economy when G rose, including explaining the significance of the change in the values shown in **c**.

D. Externalities:

Consider a small lake with a certain number of fish. The more fish that one fisherman takes, the more the breeding stock is depleted and the fewer fish are available for others to take over time. Use graphs depicting private and social costs and benefits to fishing to describe the equilibrium and the socially efficient level of fishing. Now consider three ways of attempting to reach the socially efficient level of fishing. The first way is to set a tax per fish caught. The second is to distribute a limited number of permits to fish (where the permit includes a limit on how many fish may be caught), using a free lottery among interested parties. The third way is to give a single individual, again chosen by a free lottery, the property right to the fish in the lake. Discuss the pros and cons of these three methods. Which method would you choose, and why?