

Econ 102 Discussion – Week 2

January 30-31, 2014

Review of Comparative Advantage

When there are multiple people (or groups, or countries) that can produce and trade goods amongst themselves, we can predict who will produce what based on “comparative advantage.”

First, it’s important to distinguish between *absolute advantage* and *comparative advantage*. Absolute advantage is easier to determine. The individual with absolute advantage can produce more output with the same amount of input. Comparative advantage is the ability to produce more of the first good in exchange for one unit of the other good.

Exercise 1: Countries A and B both produce X-ray machines and Yak meat. Determine which country has the absolute advantage in X and in Y? Who has the comparative advantage in each good?

Good	Output per Worker	
	A	B
X	8	6
Y	4	2

Whenever two countries can engage in trade, compared to a situation where they only consume what they produce (*autarky*), both countries will be at least as well off as they were without trade.

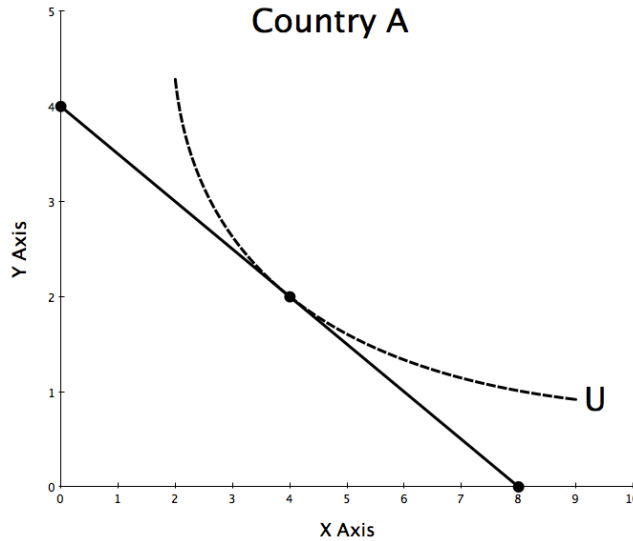
Exercise 2: Suppose that Country A initially consumes $X=4$ and $Y=2$ before trade. Country B consumes $X=3$ and $Y=1$. Generate one possible outcome with trade so that both countries are better off.

We can show graphically the ways that countries will produce by plotting the *production possibility frontier (PPF)*. This shows us all the potential combinations of production that can occur for a given country.

If we want to graph the PPF of Country A, use a graph measuring the quantity produced of one good (X) on the horizontal axis and the quantity produced of the other good (Y) on the vertical axis. Then, plot quantity produced if Country A uses all its resources to produce Y. This will be a Y-intercept of 4. Now repeat the process for X.

We can connect the two points and that gives us the graph of all possible combinations of X and Y production so that Country A is using all its production inputs (*efficiency*).

The actual level of production that will occur depends on consumer’s preferences. We model consumers’ preferences graphically by including *indifference curves*. The point where the indifference curve just barely touches the PPF will be the level of production.



When trade is possible, the PPF is no longer just a straight line. To graph the PPF of two trading countries, first plot the point where both countries only produce one good (e.g. both produce only X). Then, plot the point where both countries only produce the other good. Now, plot the point where each country is producing only the good in which they have the comparative advantage. Connecting each axis point with the third point gives you the PPF.

Exercise 3: For Countries A and B from Exercise 1, plot the PPF of the economy if the countries can trade.

Now, suppose there are three countries. To plot the PPF, you follow the same general process as for two countries except you plot two points: one where only the country with comparative advantage for a good (Y) is producing it and another where only the country with the comparative advantage in the other good (X) is producing it.

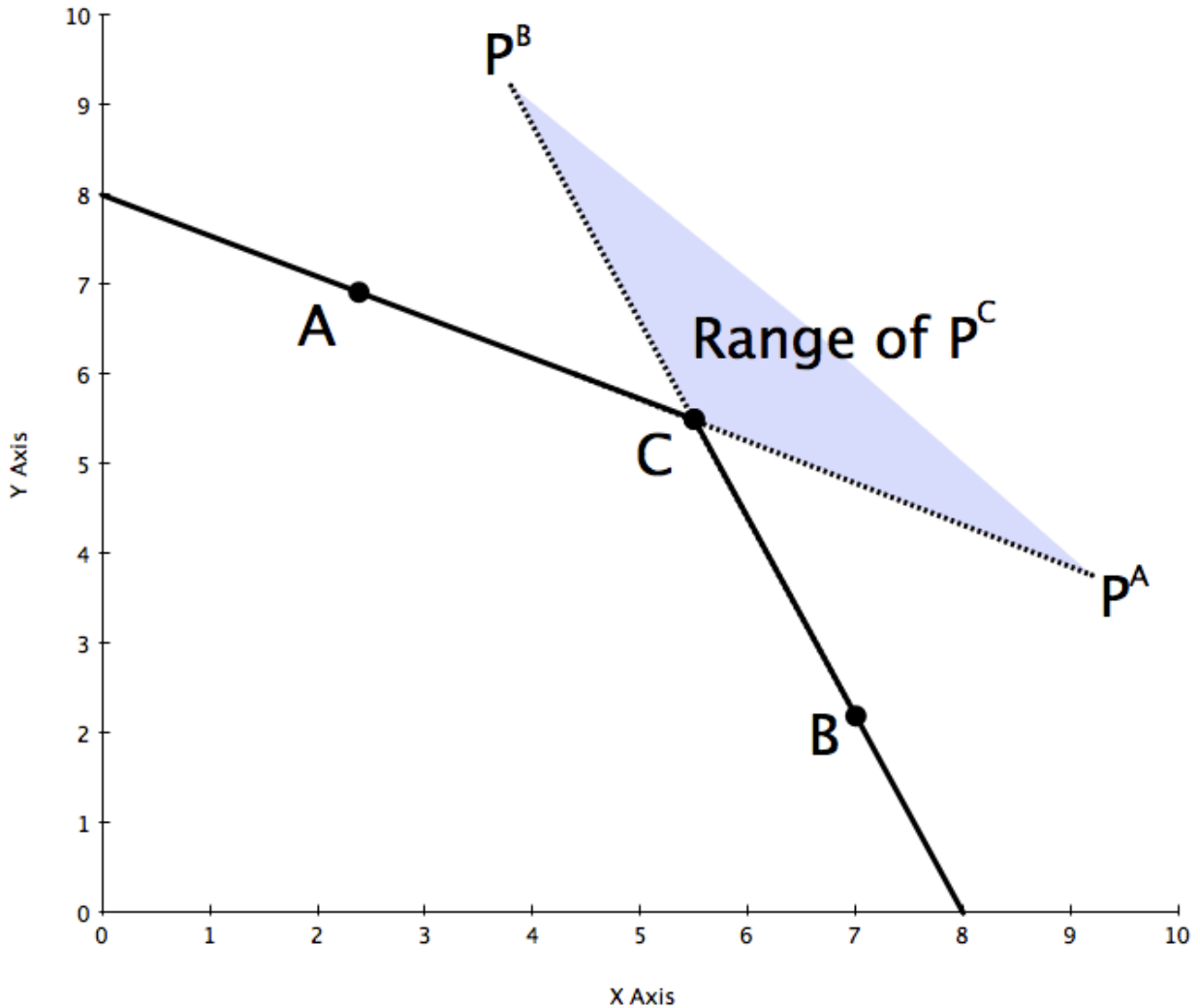
Exercise 4: Now, Countries A, B, and C each can produce X-ray machines and Yak meat. But, now they can trade. Which country has the comparative advantage over the other two countries in each good?

Good	Output per Worker		
	A	B	C
X	8	6	5
Y	4	2	2

Exercise 5: Plot the PPF of this 3 country world. Using 3 different indifference curves show one outcome where:

- i) One country produces X and all three produce Y
- ii) Two countries produce each good
- iii) One country produces X and two produce Y

The *price ratio* for the two goods is determined by the slope of the PPF at the point the indifference curve touches it. If the production point is in the middle of the line (i.e. Point A and B below), the price ratio is the same as the slope of that segment of the PPF. If the production point is at a kink in the PPF (i.e. Point C below), the price ratio can equal anything in between the slopes of the two segments forming the kink.



In the above graph, if preferences yielded production at Point A, the price ratio (i.e. $\frac{P_Y}{P_X}$) would equal the slope of P^A . At Point B, the price ratio would be P^B . If preferences yielded Point C, the price ratio could be any value between the slopes of P^A and P^B .