

Lecture #3
 Ricardian Model, Continued
 Economics C181, EEP C181
 International Trade

I. Absolute versus comparative advantage.

We saw that the United States has an absolute advantage in the production of both goods (in terms of the unit labor requirements, this means that $a_c < a_c^*$ and $a_w < a_w^*$). We saw that having absolute advantage in both goods says nothing about either the gains from trade or the pattern of trade. So why is it important at all? Absolute advantage is important because it translates into higher income. We can see this by calculating what one hour of labor will buy in each country before and after trade. (Assume traded price after trade, $P^* = 1$)

Example #1	Before Trade (Autarky)		Free Trade	
	Cheese	Wine	Cheese	Wine
USA				
France				

What happens with trade?

- (1) Everyone is better off--both in France and in the USA one hour of labor will buy more goods than it did before.
- (2) But because of its absolute productivity advantage, the USA can buy three times as much as the French--it is three times as rich.
- (3) Note that there is no cost to the wealthier or more efficient country from engaging in trade. The USA is made better off even when it trades with a "poorer" country.
- (4) The ratio of wages (3 to 1) lies between the ratios of the two country's productivity levels in the two industries. The USA is six times as productive in the production of cheese, only 1 and 1/2 times as productive in the production of wine.
- (5) Because relative wages (3 to 1) lie between relative productivity in cheese and wine ($1 \frac{1}{2} < 3 < 6$), this means that each country will end up with a cost advantage in one good. In other words, a good will always be produced where it is cheapest.

We can show this. First we need to define the following:

UNIT LABOR COST = $a \times w$

The cost of producing one unit of a good is equal to the total labor input needed to produce that good x cost per unit of labor. So the cost of producing cheese and wine in the USA and France is:

	Cheese	Wine
USA		
France		

The USA will produce cheese and France will produce wine with trade.

II. The Evidence in Favor of the Ricardian Framework

III. Another example:

Given the Unit Labor Requirements:

	TVs	Whiskey	Labor Force (Billion Hours)
Japan (Home)	$a_v=20$	$a_w=1/2$	160
Britain (Foreign)	$a_v^*=60$	$a_w^*=1$	4

- What is the price of TV's in terms of whiskey for Japan and Britain?
- What does world supply look like?
- At what traded price P^* will neither country supply TVs?
- At what P^* will there be incomplete specialization for Japan? (ie Japan produces TVs and whiskey)
- At what P^* will Japan specialize in TVs and Britain in whiskey?
- At what P^* will there be incomplete specialization for Britain (ie Britain produces both goods)
- At what P^* will both countries specialize in producing TVs?
- What are relative wages after trade if we assume a P^* of 50? Recall that relative wages are simply the ratio of the two countrys' consumption levels post-trade.

KEY: remember that a price of TVs in terms of whiskey of 50 implies that you trade 1 TV for 50 whiskeys.

IV. Summarizing the lessons from this framework.

- A country has a comparative advantage in good X relative to good Y if the following holds:
 $(a_x/a_y) < (a_x^*/a_y^*)$ OR
 $(P_x/P_y) < (P_x^*/P_y^*)$ where P is the autarky price.
- A country has an absolute advantage in X if $a_x < a_x^*$
- A country has an absolute advantage in Y if $a_y < a_y^*$
- A country can gain from trade even if it has an absolute advantage in both goods
- All countries gain from trade as long as relative prices prior to trade are not equal and production can be re-allocated to sectors where you have a comparative advantage
- Absolute advantage only matters in determining income levels (ie relative wages, as defined by consumption), not in determining gains from trade
- The pattern of trade is determined by comparative advantage (you export the good in which you have a comparative advantage)
- The model exposes three fallacies common in public debates about international trade.

V. Extending the framework to many goods

- One Factor of production: labor, two countries, home and foreign (*)
- N goods instead of only two
- Home Unit Labor Requirements: a_{L1} to a_{LN}
- Foreign Unit Labor Requirements: a_{L1}^* to a_{LN}^*
- For any good we can calculate a_{Li}^*/a_{Li}
- Can rank the goods from most efficient (for home) to least efficient: $a_{L1}^*/a_{L1} > a_{L2}^*/a_{L2} > \dots a_{LN}^*/a_{LN}$

Which goods will home produce? Depends on who has lower unit labor costs.

Home Unit Labor Costs = $w a_{Li}$

Foreign Unit Labor Costs = $w^* a_{Li}^*$

- Home will produce if $w a_{Li} < w^* a_{Li}^*$ OR if $w/w^* < a_{Li}^*/a_{Li}$
- Home will produce the good if its productivity advantage is greater than its wage disadvantage.

An Example:

Good	Home ULR	Foreign ULR	a_{Li}^*/a_{Li}
Apples	1	10	
Bananas	5	40	
Caviar	3	12	
Dates	6	12	
Enchiladas	12	9	

What will home produce if wages are 5 times as high as foreign?

What will home produce if wages are 3 times as high as foreign?

