LECTURE XI

3 April 2012

COMPARATIVE ADVANTAGE

- Note that the opportunity cost of one good is in terms of the other good of production

- **Comparative Advantage:** Able to produce a specific product at a lower *opportunity cost* than another country

  - Can figure out comparative advantages from the PPF or from the productivity data

  - On the PPF, remember the slope gives the OC(x-axis good)

  - In the data, simply compare production of each good in a given time frame

COMPARATIVE ADVANTAGE

- United States OC
  - The US can make 3 computers / hr and 6 coffee / hr
  - So if the US makes 3 computers, it gives up 6 coffee or for 1 computer, 2 coffee. So OC(computer) = 2 coffee
  - If the US makes 6 coffee, it gives up 3 computers or for 1 coffee, 1/2 computer. So OC(coffee) = 1/OC(comp) = 1 / 2 computer
- Can do the same for Brazil and find OC(computer) = 4 coffee
  - So OC(coffee) = 1/4 computers

COMPARATIVE ADVANTAGE

- Can summarize opportunities cost:

	Coffee	Computers
US	.5 computers	2 coffee
Brazil	.25 computers	4 coffee

- So to produce 1 computer in Brazil we gave up for 4 coffee; in the US we gave up 2 coffee
- So *in terms of other good of production* the cost of producing computers in Brazil is higher
- We then say, the US has a **comparative advantage in producing computers** because the cost to produce is less
- Likewise, Brazil has a **comparative advantage in producing coffee**

MOTIVATION FOR TRADE

- We will argue that both countries can be better off if they specialize in production of the good they have a comparative advantage for
  - So US should produce specialize in computers and Brazil in coffee
- Suppose before that the US was producing 12 computers and 24 coffee and Brazil 4 computers and 16 coffee (check this is possible)
  - Total production of computers is 16, coffee 40
  - Now allow them to specialize: the US produces 18 computers, 12 coffee (again check) and Brazil 32 coffee
  - Total production of computers is 18, coffee 44

MOTIVATION FOR TRADE

- Total world production has expanded (2 computers, 4 coffee a day)
- Because total world production has increased both have the potential to be better than off before
- Whether they will depends on distribution of goods, which depends on prices

TERMS OF TRADE

TERMS OF TRADE

- In this world we can figure out prices by looking at exchange of goods
- **Terms of trade**: rate at which units of one product can be exchanged for units of another product

- How do we figure out prices?
  - US has computers and Brazil wants it
  - Could the US demand 20 coffee for 1 computer?
  - No! It takes 5 hours to make 20 coffee in Brazil and could produce 5 computers in that time
  - So we can bound prices by opportunity costs

SETTING PRICE BOUNDS

- **Maximum terms of trade (in this case)**: 1 computer = 4 pounds of coffee, exactly the OC(computer) in Brazil
  - How about the other way?
  - Could the US be convinced to sell 1 computer for 1 pound of coffee?
  - No! Because the US gave up 2 coffee for 1 computer (OC(computer) = 2 coffee in US)
- **Minimum terms of trade**: 1 computer = 2 pounds of coffee

SETTING PRICE BOUNDS

- So the opportunity costs in both countries set the maximum and minimum prices on the goods; any price in between the two is realistic and will induce trade
- Let's let the terms of trade be 2.6 (1 computer = 2.6 coffee) and the US consumes 13 computers
  - The US consumes 13 implies 5 computers are exported
  - 5 computers with ToT of 2.6 implies they import 13 coffee
  - So US coffee consumption is 12 + 13 = 25, since no coffee is exported
  - Brazil exports 13 coffee and imports 5 computers so consumption is (32-13) 19 coffee and 5 computers
- Terms of trade in reality adjust so countries are better off than before (as in this case)

REVIEW

- Trade is a significant part of GDP for most economies in the world
- Trade arises because of differences in resources, desires, and technologies
- In motivating trade in the Ricardian model, we only care about comparative advantages in production
- In the simple case of 2 countries and 2 goods, we can see that trade will always benefit both countries because one country always the comparative advantage in production of one good