

## Lecture 21: Comparative Advantage and International Trade

### I. OVERVIEW

- In the last lecture, we discussed the principle of comparative advantage as it applies to individuals and to countries.
- In today's lecture, we will examine how trade can affect the relative prices of goods, setting the stage for our discussion about the costs and benefits of trade in the next lecture.

### II. PRE-TRADE AND POST-TRADE PRICES

- In the last class, we looked at two countries with the following PPFs and concluded that Taiwan had a comparative advantage in VCRs and that the U.S. had a comparative advantage in computers.

	<i>VCR</i>	<i>Desktop Computers</i>
United States	10 million	2 million
Taiwan	5 million	500,000

- We now need to take a look at what the relative prices of computers and VCRs are in each of the countries both in the absence of trade and in the presence of trade. This will help us pin down the production and trade patterns.
- In the United States, the opportunity cost of producing 1 desktop computer equals the cost of producing 5 VCRs. Therefore, in a competitive market the price of a desktop computer has to equal the price of 5 VCRs, in the absence of trade.
- In Taiwan, the opportunity cost of producing 1 desktop computer equals the cost of producing 10 VCRs. Therefore, in a competitive market the price of a desktop computer has to equal the price of 10 VCRs, in the absence of trade.

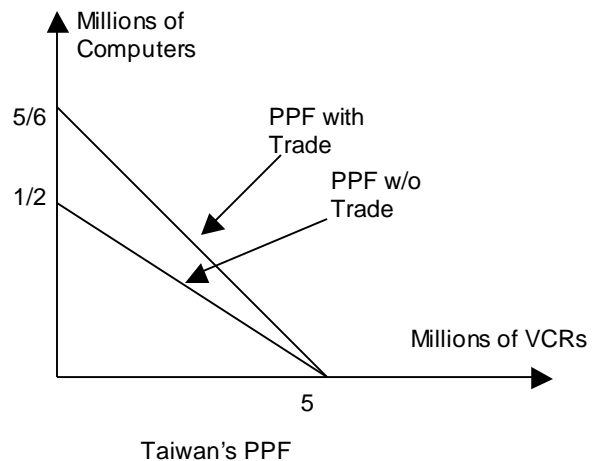
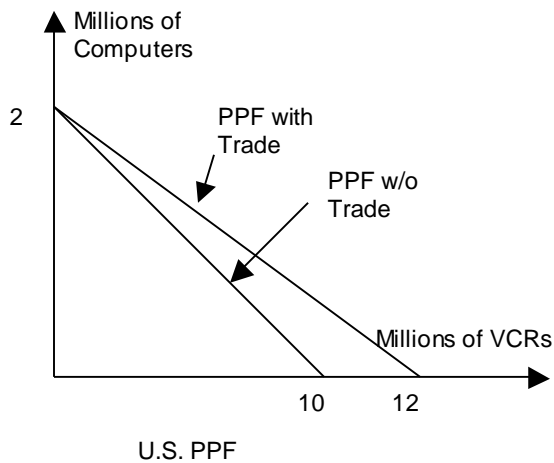
	<i>United States</i>	<i>Taiwan</i>
Relative price of desktop computers	5 VCR	10 VCR
Relative price of VCRs	1/5 Computer	1/10 Computer

- Since the relative price of goods differs across countries there is an opportunity for buying goods where they are cheap and selling them where they are expensive. This of course assumes that the cost of transporting the goods is minimal.
- So, for example, since a desktop computer costs 10 VCRs in Taiwan and 5 VCRs in the United States, people will buy computers in the U.S. and sell them in Taiwan. Similarly, people will buy VCRs in Taiwan and sell them in the United States.

- In doing so they raise the demand for computers in the United States and raise the supply of computers in Taiwan. Similarly, the demand for VCRs in Taiwan will rise and the supply of VCRs in the United States rises as well. The outcome is an increase in the price of computers and a fall in the price of VCRs in the United States. Conversely, there is a rise in the price of VCRs and a fall in the price of computers in Taiwan.
- The adjustment will continue until the prices of goods in the two countries are equalized. Therefore, the relative price of a VCR in both Taiwan and the U.S. will be somewhere between 1/10 and 1/5 of a computer. This of course implies that the relative price of a computer in both Taiwan and the U.S. will be somewhere between 5 and 10 VCRs.
- Let's pick an arbitrary relative price within that range and see what the economies will choose to produce at that relative price. Suppose that the price of 1 VCR is 1/6<sup>th</sup> the price of a computer, or equivalently that the price of each computer is 6 times the price of a VCR.

### III. GAINS FROM TRADE

- The next task is to establish the possible gains from trade. Since the relative price of a computer is 6 VCRs, the U.S. can trade 1 million computers for 6 million VCRs. Since the U.S. could have only produced 6 million VCRs themselves by giving up production of 1.2 million computers they are better off. Similarly, since Taiwan can only produce 1 million more computers by giving up production of 10 million VCRs they are better off after the trade.
- So the PPF after trade is expanded from the original PPF. The U.S. can produce 2 million computers and trade any or all of them for 6 VCRs apiece. Taiwan can produce 5 million VCRs and trade any or all of them for 1/6 a computer each. The expanded PPFs are shown in the two diagrams below.



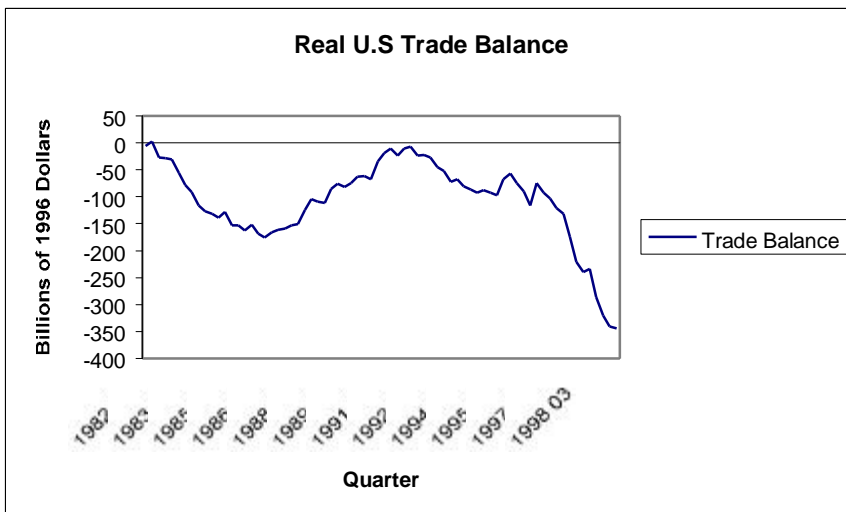
- Furthermore, the relative price of PCs in the U.S. rose from 5 VCRs to 6 VCRs while the relative price of VCRs fell from 1/5 of a PC to 1/6 of a PC.
- Conversely, the relative price of PCs in Taiwan fell from 10 VCRs to 6 VCRs while the relative price of VCRs rose from 1/10 of a PC to 1/6 of a PC.
- So trade raises the price of goods that we have a comparative advantage in and lowers the price of goods we don't have a comparative advantage in.

### III. FACTORS THAT DETERMINE COMPARATIVE ADVANTAGE

- There are several potential explanations for why countries can have a comparative advantage in certain goods. Amongst these reasons are
  - a. Weather/Climate
  - b. Natural Resources
  - c. Capital, Labor and Technology
- The differences in capital, labor and technology across countries are probably the biggest explanation for why countries have comparative advantage in certain goods. A famous economic model called the Heckscher-Ohlin model examines the link between the amount of capital and labor that a country has and the goods that they produce.
- For example: let's compare the U.S. and Honduras. Since the U.S. has more capital relative to labor than Honduras, the U.S. is said to be abundant in capital while Honduras is said to be abundant in labor.
- Then, according to the Heckscher-Ohlin model the U.S. is likely to produce goods that require more capital relative to labor to produce: goods like computers, cars, scientific instruments and telecommunication equipment.
- In contrast, Honduras is more likely to produce goods like textiles, clothing, shoes, light electronics and soft toys: goods that require more labor relative to capital to produce.
- In short, the Heckscher-Ohlin model predicts that a country will have a comparative advantage in producing goods that intensively use the inputs that a country is relatively abundant in.

### IV. THE TRADE BALANCE

- Net exports (exports – imports) is also referred to as the trade balance. A negative value of net exports is referred to as the trade deficit and a positive value for NX is referred to as the trade surplus.
- The United States has been running a trade deficit for the last 20 years or so. The deficit has fluctuated over time, but recently has reached the highest levels it has ever seen. The other period in which the trade deficit was high was the 1980's.



- The trade balance is sometimes separated out into the balance for goods and the balance for services. Goods that are traded across countries include oranges, cars, wheat, anchovies, tomatoes, bananas etc. Trade in services include education, insurance, banking and consulting.
- When we talk about trade balances it is also important to distinguish between bilateral and multi-lateral trade balances. A bilateral trade balance refers to the trade balance between any pair of countries while the multi-lateral trade balance for a country with several or all of its trading partners.
- The 10 trading partners with which the U.S. had the largest bilateral trade deficits are given below.

<b>Country</b>	<b>Bilateral Trade Balance</b>
China	-6,029.85
Japan	-5,576.35
Canada	-4,289.70
Germany	-2,340.75
Mexico	-1,767.23
Taiwan	-1,295.33
Italy	-1,026.96
Malaysia	-1,012.21
Korea	-1,002.44
Venezuela	-977.87

#### V. CAN TRADE DEFICITS INDICATE THE HEALTH OF AN ECONOMY?

- Currently, trade deficits are at an all time high. Over the last decade or so there has been public hand wringing over the allegedly disastrous impact of substantial trade deficits. One question we would like to answer is whether having a trade deficit is necessarily a bad omen for the economic health of a country.
- Correspondingly, should running a trade surplus be our overarching goal? Is a country with a trade surplus always better off than a country with a trade deficit?
- The important identity that we should always keep in mind is that  $S - I = NX$ ; a trade deficit is always accompanied by an excess of investment over savings.
- Therefore, a sustained trade deficit can be a bad sign for an economy because it can indicate a deeper underlying problem, such as a large budget deficit or a lack of private savings that causes a sustained fall in savings (a fall in S).
- However, a trade deficit could come about because of the emergence of great investment opportunities (increases in I) that attract a lot of foreign lenders. In that case, a trade deficit is accompanied by a boom in investment and may not necessarily be a bad thing.
- The bottom line then is that a trade deficit in and of itself cannot fully indicate the underlying health of the economy. A healthy, developing economy that attracts a lot of foreign investment will run a trade deficit while a poor struggling economy that does not have very much foreign investment and a lot of capital fleeing the country will run a trade surplus.