

Teacher: J. A. Lopez	Subject: Macroeconomics	Date:4/4/2017
TEKS: 1A,B,C,D	Measurable Objective: Students will solve AP level questions by learning how to apply two strategies: (1) “other goes over” and the (2) “other goes under” matrices. Please see next page.	

Lesson Background

What is the context of the lesson? Students will learn the concept of opportunity cost and then create matrices which will reflect what the opportunity costs of two products are for two different countries. The strategy to calculate opportunity cost will be the “other goes over” rule for output questions (finished products) and “other goes under” rule for input questions (time it takes to produce- per hour). The country with the lower opportunity costs is the one with the comparative advantage.

Focus: The focus of this lesson is that students will learn how to apply the strategy to calculate opportunity cost and once they have done so – it becomes evident which country has the comparative advantage for each product. Knowing which country has the comparative advantage will allow students to conclude which country should be producing and exporting that product.

How will they best learn it? What will students be doing to help them learn?
 Students will observe teacher modeling and then solve one “output” matrix and one “input” matrix. A series of questions would be asked about opportunity cost and comparative and absolute advantage.

Describe lesson events & CIF strategy/ technique to be used: CGW and Classroom talk will be used to produce the finished product.

Student Learning Objectives

1. Discussing ideas and create solutions as a team
2. Teams will support one another’s input and ideas collectively via of discussions

COMPARATIVE & ABSOLUTE ADVANTAGE

OUTPUT

"OTHER GOES OVER" STRATEGY

	1 CARS	2 PLANES
COUNTRY A	$10/100$ $IC = 1/10P$ $(.10)$ 100	$100/10$ ✓ $IP = 10C$ 10
COUNTRY B	$6/120$ $IC = 1/20P$ $(.05)$ ✓ 120	$120/6$ $IP = 20C$ 6

COUNTRY A HAS THE ABSOLUTE ADVANTAGE IN PLANES 10 to 6

COUNTRY B HAS THE ABSOLUTE ADVANTAGE IN CARS 120 to 100

- WITH ALL AVAILABLE RESOURCES

OUTPUT = FINISHED PRODUCTS

OPPORTUNITY COST

- 1 PLANE COSTS COUNTRY A 10 CARS
- 1 PLANE COSTS COUNTRY B 20 CARS
- A HAS THE COMPARATIVE ADVANTAGE IN PRODUCING PLANES

INPUT

"OTHER GOES UNDER" STRATEGY

	1 CHEESE	2 WATCHES
COUNTRY A	$3/6$ $IC = 1/2W$ $(.5)$ $3h$	$6/3$ ✓ $IW = 2C$ $6h$
COUNTRY B	$2/8$ $IC = 1/4W$ ✓ $(.25)$ $2h$	$8/2$ $IW = 4C$ $8h$

INPUT = HOURS IT TAKES TO PRODUCE 1 UNIT OF OUTPUT. LOWEST AMOUNT OF HOURS HAS THE ABSOLUTE ADVANTAGE FOR THAT PRODUCT

COUNTRY A HAS ABSOLUTE ADVANTAGE IN WATCHES - 6HRS vs 8HRS

COUNTRY B HAS THE ABSOLUTE ADVANTAGE IN CHEESE - 2HRS vs. 3HRS

OPPORTUNITY COST

- 1 WATCH COSTS COUNTRY A 2 CHEESES
- 1 WATCH COSTS COUNTRY B 4 CHEESES
- A HAS THE COMPARATIVE ADVANTAGE IN PRODUCING WATCHES

REMEMBER: COMPARATIVE ADVANTAGE MEANS BEING ABLE TO PRODUCE GOODS FASTER OR WITH THE LOWEST OPPORTUNITY COST USING ALL AVAILABLE RESOURCES.

economy. Perhaps its most important application is in trade—not between individuals, but between countries. So let’s look briefly at how the model of comparative advantage helps in understanding both the causes and the effects of international trade.

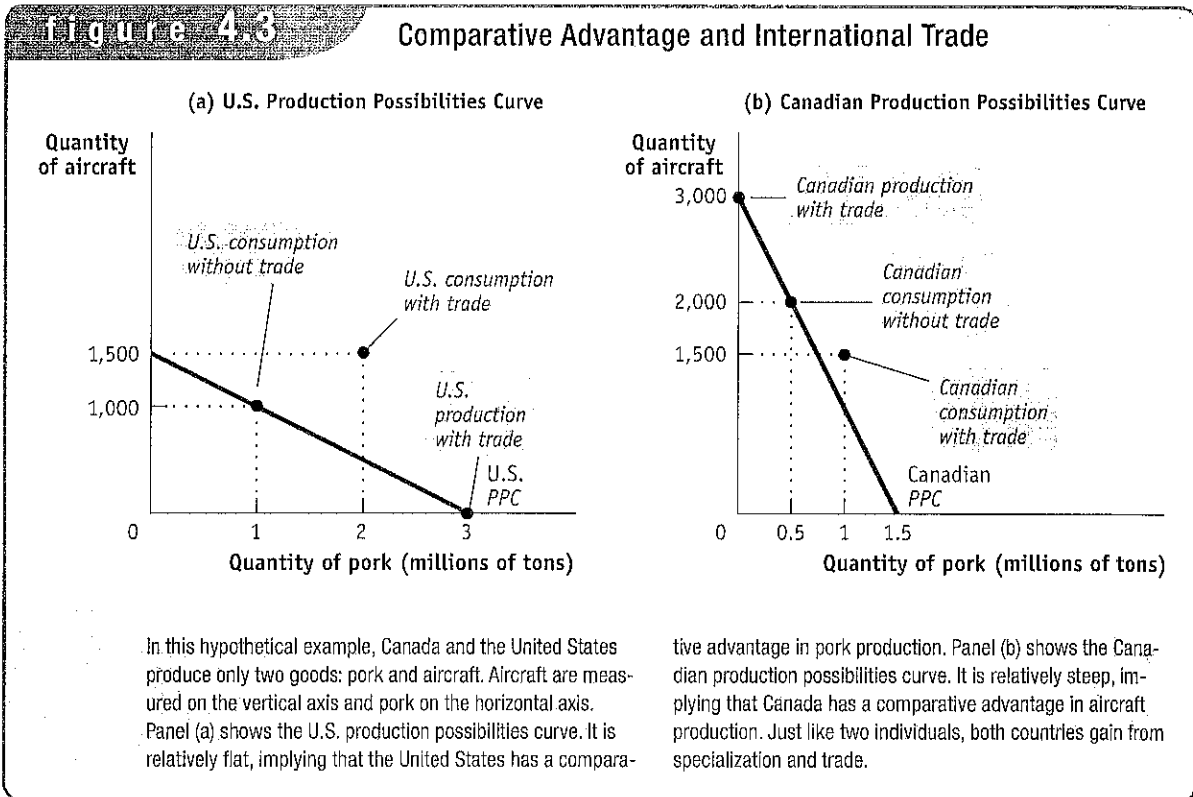
Comparative Advantage and International Trade

Look at the label on a manufactured good sold in the United States, and there’s a good chance you will find that it was produced in some other country—in China or Japan or even in Canada. On the other hand, many U.S. industries sell a large portion of their output overseas. (This is particularly true for the agriculture, high technology, and entertainment industries.)

Should we celebrate this international exchange of goods and services, or should it cause us concern? Politicians and the public often question the desirability of international trade, arguing that the nation should produce goods for itself rather than buy them from foreigners. Industries around the world demand protection from foreign competition: Japanese farmers want to keep out American rice, and American steelworkers want to keep out European steel. These demands are often supported by public opinion.

Economists, however, have a very positive view of international trade. Why? Because they view it in terms of comparative advantage.

Figure 4.3 shows, with a simple example, how international trade can be interpreted in terms of comparative advantage. Although the example is hypothetical, it is based on an actual pattern of international trade: American exports of pork to Canada and Canadian exports of aircraft to the United States. Panels (a) and (b) illustrate hypothetical production possibilities curves for the United States and Canada, with pork measured on the horizontal axis and aircraft measured on the vertical axis. The U.S. production possibilities curve is flatter than the Canadian production possibilities curve, implying that producing one more ton of pork costs fewer aircraft in the



United States than it does in Canada. This means that the United States has a comparative advantage in pork and Canada has a comparative advantage in aircraft.

Although the consumption points in Figure 4.3 are hypothetical, they illustrate a general principle: just like the example of Tom and Hank, the United States and Canada can both achieve mutual gains from trade. If the United States concentrates on producing pork and ships some of its output to Canada, while Canada concentrates on aircraft and ships some of its output to the United States, both countries can consume more than if they insisted on being self-sufficient.

Moreover, these mutual gains don't depend on each country's being better at producing one kind of good. Even if one country has, say, higher output per person-hour in both industries—that is, even if one country has an absolute advantage in both industries—there are still mutual gains from trade.

Module 4 AP Review

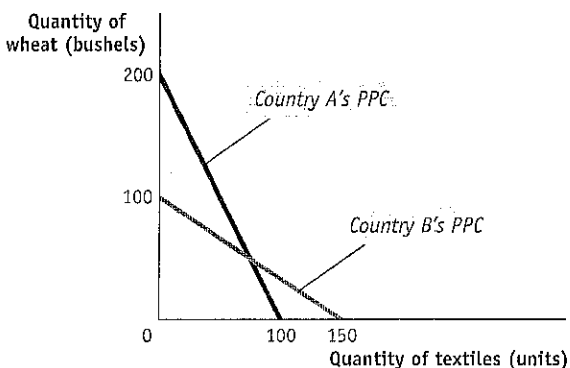
Solutions appear at the back of the book.

Check Your Understanding

- In Italy, an automobile can be produced by 8 workers in one day and a washing machine by 3 workers in one day. In the United States, an automobile can be produced by 6 workers in one day, and a washing machine by 2 workers in one day.
 - Which country has an absolute advantage in the production of automobiles? In washing machines?
 - Which country has a comparative advantage in the production of washing machines? In automobiles?
 - What type of specialization results in the greatest gains from trade between the two countries?
- Refer to the story of Tom and Hank illustrated by Figure 4.1 in the text. Explain why Tom and Hank are willing to engage in a trade of 1 fish for $1\frac{1}{2}$ coconuts.

Tackle the Test: Multiple-Choice Questions

Refer to the graph below to answer the following questions.



- Use the graph to determine which country has an absolute advantage in producing each good.

Absolute advantage in wheat production

- Country A
- Country A
- Country B
- Country B
- Country A

Absolute advantage in textile production

- Country B
- Country A
- Country A
- Country B
- Neither Country

- For country A, the opportunity cost of a bushel of wheat is
 - $\frac{1}{2}$ units of textiles
 - $\frac{2}{3}$ units of textiles
 - $1\frac{1}{3}$ units of textiles
 - $1\frac{1}{2}$ units of textiles
 - 2 units of textiles
- Use the graph to determine which country has a comparative advantage in producing each good.

Comparative advantage in wheat production

- Country A
- Country A
- Country B
- Country B
- Country A

Comparative advantage in textile production

- Country B
- Country A
- Country A
- Country B
- Neither Country

- If the two countries specialize and trade, which of the choices below describes the countries' imports?

Import Wheat

- Country A
- Country A
- Country B
- Country B
- Neither Country

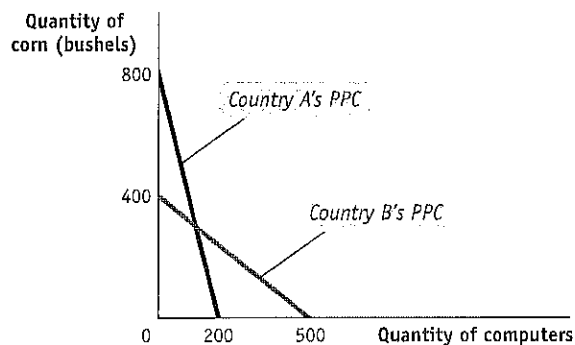
Import Textiles

- Country A
- Country B
- Country B
- Country A
- Country B

5. What is the highest price Country B is willing to pay to buy wheat from Country A?
- $\frac{1}{2}$ units of textiles
 - $\frac{2}{3}$ units of textiles
 - 1 unit of textiles
 - $1\frac{1}{2}$ units of textiles
 - 2 units of textiles

Tackle the Test: Free-Response Questions

1. Refer to the graph below to answer the following questions.



- What is the opportunity cost of a bushel of corn in each country?
- Which country has an absolute advantage in computer production? Explain.
- Which country has a comparative advantage in corn production? Explain.
- If each country specializes, what good will Country B import? Explain.
- What is the minimum price Country A will accept to export corn to Country B? Explain.

2. Refer to the table below to answer the following questions. These two countries are producing textiles and wheat using equal amounts of resources.

	Weekly output per worker	
	Country A	Country B
Bushels of Wheat	15	10
Units of Textiles	60	60

- What is the opportunity cost of producing a bushel of wheat for each country?
- Which country has the absolute advantage in wheat production?
- Which country has the comparative advantage in textile production? Explain.

Answer (9 points)

1 point: Country A, $\frac{1}{4}$ computers; Country B, $1\frac{1}{4}$ computers

1 point: Country B

1 point: Because Country B can produce more computers than Country A (500 versus 200)

1 point: Country A

1 point: Because Country A can produce corn at a lower opportunity cost ($\frac{1}{4}$ versus $1\frac{1}{4}$ computers)

1 point: Corn

1 point: Country B has a comparative advantage in the production of computers, so it will produce computers and import corn (Country A has a comparative advantage in corn production, so it will specialize in corn and import computers from Country B).

1 point: $\frac{1}{4}$ computers

1 point: Country A's opportunity cost of producing corn is $\frac{1}{4}$ computers, so that is the lowest price they will accept to sell corn to Country B.