South Dakota State University
Economics 201: Principles of Microeconomics

Comparative Advantage and Trade

International trade is an important and emotional issue. Despite opposition by labor groups and many firms, economists are almost unanimous in their support of free trade. Why? Because economic theory tells us that international trade raises living standards (i.e. real income) in both countries. This claim is directly at odds with opponents of free trade who often argue that trade invariably harms at least one of the countries involved. To see why economists are so enthusiastic about free trade, let's see what economic theory tells us about this issue.

Absolute and Comparative Advantage

What can we say about the productive possibilities of two countries? We'll say that country A has an absolute advantage in the production of a good over country B if it can produce more of that good than country B using the same resources. Country A has a comparative advantage in producing the good if it can produce the good at a lower opportunity cost than country B. Note that these concepts are not the same, and economic reasoning suggests that the country with a comparative advantage in producing a good should specialize in that good's production.

EXAMPLE: Suppose that a worker in the U.S. can produce either 120 tons of wheat or 8 televisions (or any linear combination of these quantities) in a year. A Japanese worker can produce either 50 tons of wheat or 5 tvs. (Note that we're ignoring the principle of increasing costs – we're abstracting away from this important bit of reality because its immaterial to this point and would significantly complicate our analysis). The PPFs showing combinations of goods that can be produced using a labor year are shown below.

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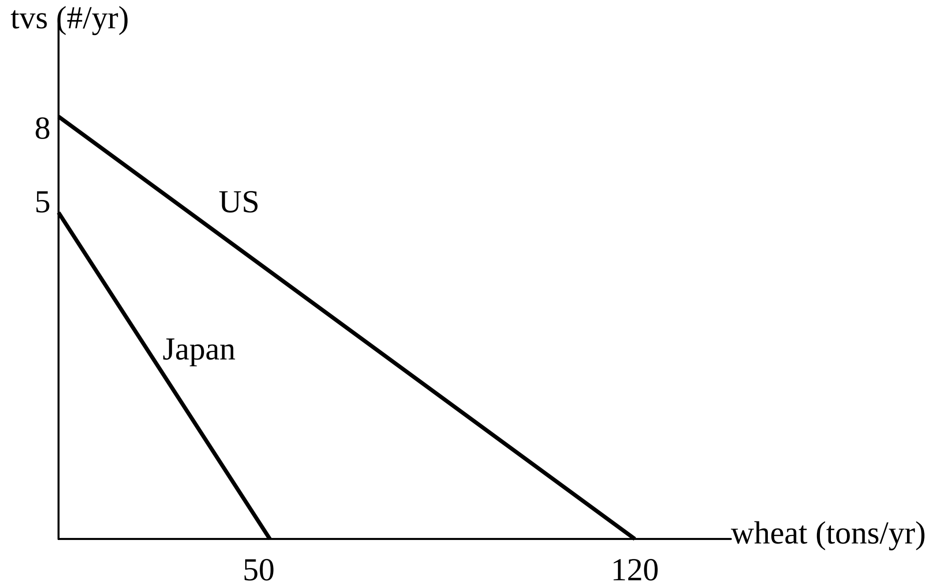

The U.S. has an absolute advantage in the production of each good because if the two countries dedicate equal resources to the production of each good, the U.S. will produce both more tvs and more wheat than Japan. To see whether the U.S. or Japan has a comparative advantage, though, we must compute the relevant opportunity costs.

	U.S.	Japan
OC of a TV	15 tons wheat	10 tons wheat
OC of a ton of wheat	1/15 TV	1/10 TV

Japan has a CA in producing TVs and the US has a CA in producing wheat. This means that if the two nations can trade with one another, it is better for both countries if the U.S. specializes in wheat production while Japan specializes in tv production.

To see how this works, suppose that the U.S. transfers 15 workers out of tv production and into wheat production. Likewise, Japan moves 25 workers out of wheat production into TV production. What happens to output in each country?

	U.S.	Japan	Total
TVs:	-120	+125	+5
Wheat:	+1800 tons	-1250 tons	+550 tons

Through this specialization, total output of each good rises. This means that there is more of each good for both countries so that both can be made better off.

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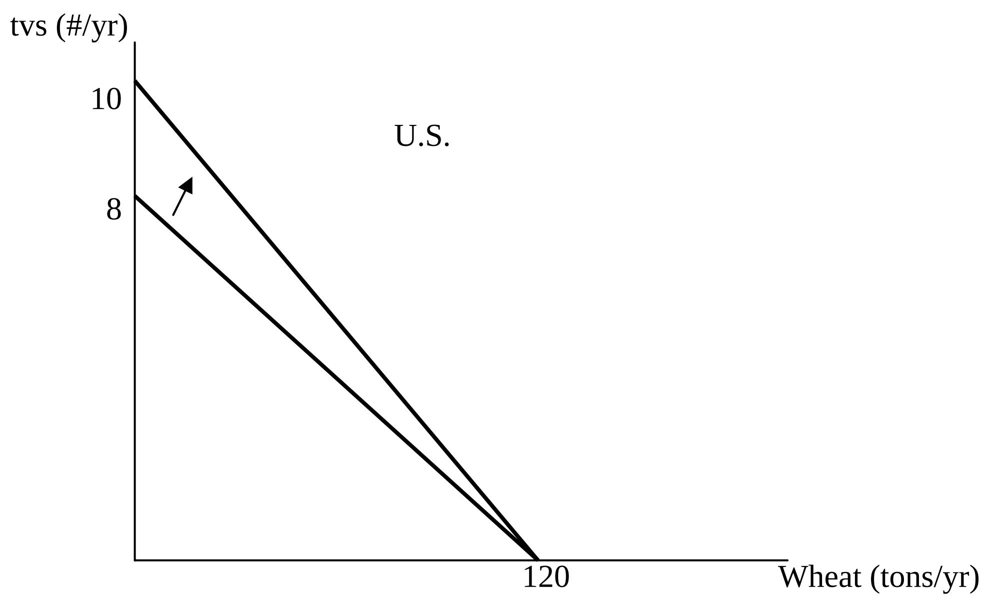
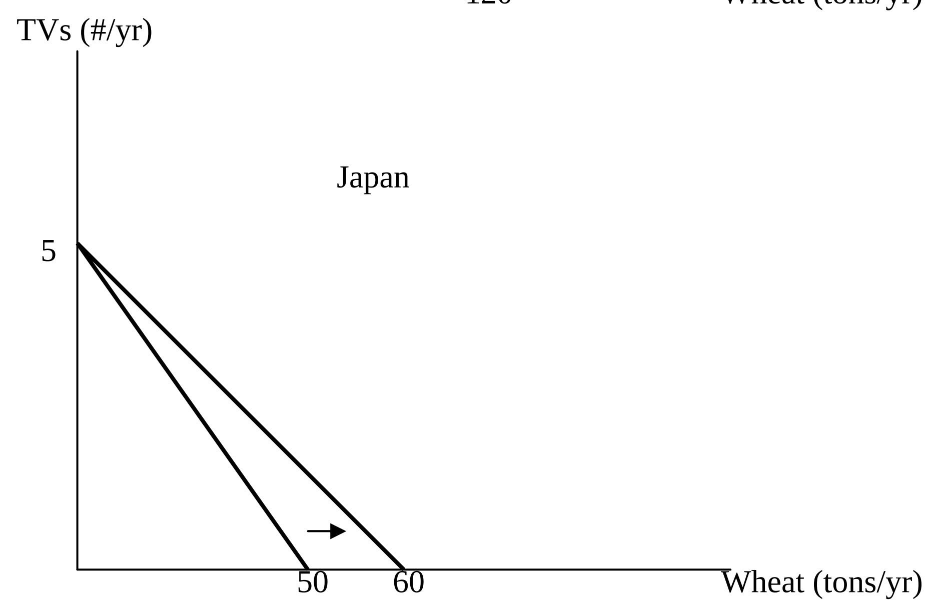
Of course, in order for trade to be possible, there must be a recognized exchange ratio for the two goods. Specifically, the exchange ratio for tvs must lie between the opportunity cost faced by each nation. If the “price” of a TV is less than 10 tons of wheat, Japan won’t trade tvs to the U.S. since it receives more wheat if by diverting its own television resources to wheat production. Likewise, if the “price” of a TV is greater than 15 tons of wheat, the U.S. won’t want Japanese TVs since it can produce them itself at a lower opportunity cost.

Aside from this caveat, any exchange ratio between these two OCs allows for mutually beneficial trade. For instance, suppose that the exchange ratio settles at 12 tons of wheat per TV. Then the PPFs faced by the two nations become as shown:





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A couple of points to note:

1) Note that the PPFs of both countries shifted out. Hence, both countries have been made better off as a result of specialization and trade. *While it is true that workers in the U.S. TV industry and the Japanese corn industry may have suffered*, the fact that the PPFs each shifted out means that living standards have risen so that, in principle, those workers could be compensated and still leave society as a whole better off.

2) Note that trade will usually be more beneficial if it occurs between very different countries than very similar countries, since the gains from trade stem from differences in opportunity costs.

3) Finally, notice that the same basic logic can explain many exchanges, not just those in the international sector. Any time agent X has a comparative advantage in producing a good over agent Y, there is a mutually beneficial exchange to be made by having agent X producing the good and selling it to agent Y.

   e.g. Donovan McNabb might be a better cook than the person who prepares his meals. He's also probably a better QB than the person who prepares his meals. So why does McNabb hire a cook? Here, McNabb has an absolute advantage in both cooking and signal-calling, but he's probably not much better at cooking than his chef, while he's way better at playing football than his chef. Thus, his chef has a comparative advantage in cooking. To put it differently, the cook gives up maybe $20 or so for every hour he spends preparing McNabb's meals. McNabb gives up potentially thousands of dollars for every hour he would spend preparing his meals. Thus, McNabb faces a much higher opportunity cost of meal preparation, and it makes economic sense for him to pay his cook something between $20 and $1000 per hour to cook for him.

Protectionism

<u>Protectionism</u> refers to any situation in which a country deliberately blocks imports of a particular good in an effort to benefit domestic manufacturers of that good. Common examples of protectionism involve <u>quotas</u>, in which the country imposes an upper limit on the amount of a good that can be imported, or a <u>tariff</u>, in which the country imposes a special tax on imported products.

While the mechanics of tariffs and quotas obviously differ, their results are the same. In each case, it becomes more difficult to import a good, thus reducing the gains that were earned through trade. On the other hand, note that those who were harmed by trade (usually producers in the importing country) are helped by protectionism.

There are several common arguments in favor of protectionism:

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1) The "infant industry" argument. This argument goes that industry X is just getting off the ground and needs to be protected from foreign competition until it can mature. While there might be some legitimacy to this argument in some instances, how many industries asking for protection in the U.S. can be characterized as "new" industries? The auto industry? Steel? Agriculture? Textiles? Furthermore, it's amazing how protection put in place for "infant" industries remains in place well into the industry's middle age and beyond! Finally, it's important to note that the alleged "infant industry" might not *ever* be competitive internationally; in which case subsidizing it with quotas or tariffs is just a waste of resources.

2) The "national security" argument. This argument might also have some validity. For instance, preserving a domestic oil industry (or steel, or rubber, etc.) might be strategically advantageous to avoid dependence on (hostile) foreigners. Of course, the extent to which this matters depends on geo-political considerations as well as the cost of saving jobs in the industry.

3) The "cheap foreign labor" argument. Many countries have wages lower than ours. For example, it is well-known that Mexican workers earn much lower wages than American workers. It is sometimes argued that American industries need to be protected from competition from Mexican firms who therefore enjoy much lower production costs. The main problem with this argument is that wages per hour are irrelevant. What matters is wages *per unit of output*. Because U.S. workers are more productive than Mexican workers (better education, better equipment to work with), American workers produce more output per hour than Mexicans and spread that hourly wage out over more units of output. The result is that for most manufacturing industries, unit labor costs are *lower* in the U.S. than they are in Mexico.

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