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Principles of Economics

Comparative Advantage and the Gains from Trade

It would be silly for an individual to try to produce everything that he consumes himself. It is much better for the individual to specialize—doing one or two things himself (usually at his job)—and using the income earned from those things to buy other stuff (produced by other people). In this way, all of us are better off.

Exchange makes people better off

In effect, the individual described above is engaged in a trade; he is producing stuff and trading (the income earned from) it to get other stuff from other people.

Citizens of a country also benefit in the aggregate by trading with citizens of other countries. The principle of **comparative advantage** helps us to see this.

Comparative advantage is a logical framework with which we can see the gains from trade—how an individual or group can be better off by trading, relative to not trading. We will eventually use this principle to examine international trade. First, let's use it to examine trade between two hypothetical individuals.

How two people can gain from trade: an example

Biff and Veronica, the only two people in the world, can engage in only two activities—producing food and/or producing clothing. How much can they produce per hour? See the information below:

Biff would take 12 hours to produce 1 unit of food

and/or

6 hours to produce 1 unit of clothing

Veronica would take 1 hour to produce 1 unit of food

and/or

3 hours to produce 1 unit of clothing

Notice that Veronica is 12 times better at food production than Biff and she is 2 times better at clothing production than Biff.

Common sense would tell us that there's no way that Veronica can benefit by trading with Biff. Right?

Wrong.

Veronica should concentrate on food production, trading some of it to Biff in exchange for clothing. Biff should concentrate on clothing production, trading some of it to Veronica for food. Why?

Let's look at Veronica first:

If Veronica were dumb enough to produce her own clothing, it would distract her from what she does really really well—producing food. Indeed, for every unit of clothing that she is dumb enough to produce, she gives up 3 hours of her valuable time—enough time to produce 3 units of food:

“Cost” of producing 1 unit of clothing for herself = 3 units of food

Veronica would be better off if she could trade some of her food for clothing from Biff—say, by trading 2 units of food for each unit of clothing.

Now let's look at Biff

If Biff were dumb enough to produce his own food, it would distract him from what he does a little better—producing clothing. Indeed, for every unit of food that he is dumb enough to produce, he gives up 12 hours of his valuable time—enough time to produce 2 units of clothing:

“Cost” of producing 1 unit of food for himself = 2 units of clothing

Biff would be better off if he could trade some of his clothing for food from Veronica—say, by receiving two units of food for each unit of clothing that he produces.

Notice that both people are better off by trading at the rate of two units of food for one unit of clothing. Both Biff and Veronica gain from trade.

Now let's use two countries to illustrate the theory of comparative advantage.

Hypothetical Example:

The U.S. and China, the only two countries in a hypothetical world, can engage in only two activities—producing computers and/or producing dolls. How much can they produce per hour? See the information below:

China would take 10 hours to produce 1 computer

and/or

5 hours to produce 1 doll

The U.S. would take 1 hour to produce 1 computer

and/or

4 hours to produce 1 doll

Notice that the U.S. is 10 times better at computer production than China and the U.S. is 1.25 times better at doll production than China.

Common sense would tell us that there's no way that the U.S can benefit by trading with China. Right? Wrong.

If the U.S. did not trade with China, what is the cost of producing each thing?

U.S. cost of producing 1 computer for itself = 1/4 of a doll

U.S. cost of producing 1 doll for itself = 4 computers

If the China did not trade with the U.S, what is the cost of producing each thing?

China cost of producing 1 computer for itself = 2 dolls

China cost of producing 1 doll for itself = 1/2 of a computer

Analysis of the above cost information

The U.S. has the comparative advantage in computer production, because it sacrifices fewer dolls than China does for each computer that it produces. (The U.S. sacrifices 1/4 of a doll; China sacrifices 2 dolls.)

China has the comparative advantage in doll production, because it sacrifices fewer computers than the U.S. does for each doll that it produces. (The U.S. sacrifices 4 computers; China sacrifices ½ of a computer.)

Implication of the theory of comparative advantage

Each country should produce and export things in which it has a comparative advantage, and import the other things.

In our example, the U.S. should export computers and import dolls. China should export dolls and import computers.

In this way, citizens of both countries can consume more of both goods

Let's examine our example further.

Let's look at the U.S. first:

If the U.S. were dumb enough to produce its own dolls, it would distract the U.S. from what it does really really well—producing computers. Indeed, for every unit of dolls that the U.S. it is dumb enough to produce, it gives up 4 hours of its valuable time—enough time to produce 4 computers:

“Cost” of producing 1 unit of dolls for itself = 4 units of computers

The U.S. would be better off if it could trade some of its computers for dolls from China—say, by trading 2 computers for each doll.

Now let's look at China

If China were dumb enough to produce its own computers, it would distract it from what it does a little better—producing dolls. Indeed, for every unit of computers that China is dumb enough to produce, it gives up 10 hours of his valuable time—enough time to produce 2 units of dolls:

“Cost” of producing 1 unit of computers for itself = 2 units of dolls

China would be better off if it could trade some of its dolls for computers from the U.S.—say, by receiving two computers for each doll that it produces.

Notice that in the aggregate, people are better off in both countries by trading at the rate of two units of computers for one unit of dolls. The Average American and Average Chinese Person are both made better off by international trade. (This does not mean, however, that every single American and every single Chinese person are better off as a result of international trade; a few people in the U.S. and China may actually be worse off, but the benefits to the many outweigh the harm to the few.)