

International Trade

We briefly turn our attention to the topic of international trade. Suppose that we observe two countries trading. If this trade is made voluntary, then it surely benefits the people buying and selling the goods and services, otherwise they would decline to engage in the transaction. This simple observation suggests a general predisposition towards allowing trade, including between countries.

The notion of voluntary gains to trade does not, however, rule out cases where countries might want to restrict international trade. There could be impacts on third-parties, including externalities, that justify restrictions. Suppose Country A seeks to trade intercontinental ballistic missiles to Country B in exchange for nuclear warheads in order to turn Countries C-Z into liquid hot magma. Free trade, openly allowing parties within countries to trade, is probably a bad idea.

Barriers to trade are obstacles that prevent agents from trading across borders as they would within borders. Some examples include:

1. Outright bans on exports (goods sold from the home country to the foreign country) or imports (goods sold to the home country from the foreign country). Note that one country's import is its trading partner's export.
2. Tariffs. Tariffs are taxes, usually imposed on imports. Historically, they have been significant sources of revenue for governments.¹ Prior to the twentieth century, tariffs were the U.S. government's primary source of income.
3. Quotas. These are limitations of the amount that a country may export. A famous example is the amount of sugar that can be imported into the U.S.

Comparative Advantage

Comparative advantage is a relative concept. It explains which goods a country is relatively good at producing in comparison to other goods and other countries. Consider an example:

¹Graph courtesy of Chad Brown and Douglas Irwin, Peterson Institute for International Economics

Figure 1: Tariffs as a Share of U.S. Government Revenue

Even Now, Tariffs Are a Tiny Portion of US Government Revenue

US tariff revenue as percent of total government revenue, 1795–May 2019



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Source: See Figure 1 of Chad P. Bown and Douglas A. Irwin's article, "Tariff revenue and Trump tweets — 5 things you need to know," *Washington Post Monkey Cage*, July 16, 2019.

Consider a simple example. The United States has 100 hours of labor. It takes 10 hours to produce computer and 2 to produce textiles (e.g. a pair of acid washed jorts). The U.S. can thus produce 10 computers or 50 textiles. We can graph this to show the *production possibilities frontier*.

Graph: US PPF

Consider the concept of opportunity cost. The opportunity cost of producing a computer is 5 textiles. Likewise the opportunity cost of producing a textile is 0.2 computers.

Now consider a potential trading partner, Westeros. Westeros also has 100 hours of available labor. It, however, takes 20 hours to produce computer but only 1 hour to produce a textile. It can thus produce 5 computers or 100 textiles.

Graph: Westeros PPF

In Westeros, the opportunity cost of producing a computer is 20 textiles and the opportunity

cost of producing a textile is 0.05 computers.

Because the U.S. has a lower opportunity cost for computers, we say that that it has a comparative advantage at producing them. It is cheaper, in terms of other goods, for the U.S. to produce computers than it is for Westeros. Likewise, it is cheaper (in terms of computers) for Westeros to produce textiles. It has a comparative advantage in textiles.

Trade allows countries to specialize in the production of goods where they have a comparative advantage. Doing so allows global production to be higher. To see this important result, we start with *autarky*, where trade is not allowed and each country must be self-sufficient. Suppose that each country chooses the following:

U.S.: 5 computers, 25 textiles

Westeros : 3 computers, 40 textiles

Note that these are assumptions. There is no special reason to choose these points along the production possibilities curves.

Now assume that both countries completely specialize. The U.S. produces 10 computers and Westeros produces 100 textiles. The U.S. then trades 4 computers for 50 textiles. After trade, we have::

U.S.: 6 computers, 50 textiles

Westeros : 4 computers, 50 textiles

Both countries are able to obtain more of both goods. These outcomes were impossible without trade. Graphically, they were beyond each country's original production possibilities frontier.

Absolute Advantage

In the previous example, neither country is better at producing both goods. There is no *absolute advantage*. Now consider a case where there is. Essos also has 100 hours of labor. It takes 20 hours

to produce a computer and 10 hours to produce a textile. Because the U.S. is better at producing both, it has an absolute advantage:

Graph: Essos PPF

Despite this absolute advantage, there can still be gains to trade. Note that the opportunity cost of producing a computer for Essos is 2 textiles while the opportunity cost of producing a textile is 0.5 computers. Now Essos has the comparative advantage. Again, let us start with autarky and assume the following results:

U.S.: 5 computers, 25 textiles

Essos : 2 computers, 6 textiles

Now allow for trade. Assume that Essos fully specializes in the production of computers, making five of them. The U.S. then produces 3 computers and 35 textiles. The U.S. then trades 3 computers for 8 textiles. This leaves:

U.S.: 5 computers, 27 textiles

Essos : 3 computers, 8 textiles

Both countries are again better off with trade.

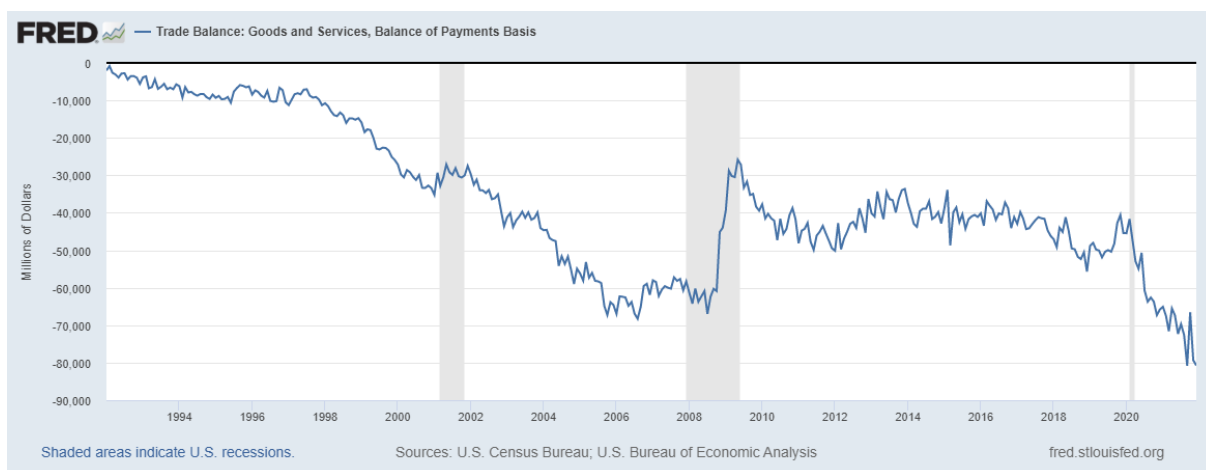
This example can be applied to actual economies. Advanced economies tend to be abundant

in high skilled labor while developing economies tend to be abundant in low-skilled labor. As a result, advanced economies tend to have a comparative advantage in goods that use a lot of high skilled labor. We thus tend to see these economies export these goods while they import goods that use a lot of low skilled labor.

Trade Deficits

At any point in time, a country's exports need not equal its imports. If a country imports more than it exports, this is known as a *trade deficit*. If its exports are greater than its imports, this is known as *trade surplus*. The United States has run a trade deficit (a negative trade surplus) for many years.

Figure 2: U.S. Trade Surplus



When a country runs a trade deficit, it is obtaining more imports than it exports. In that short-run, this is beneficial to domestic consumers. The downside is that the rest of the world must obtain the home country's assets. If the U.S. buys \$900 billion in imports but sells only \$600 billion in exports, the rest of the world acquires \$300 billion in U.S. assets. This may be cash that is then used to purchase other assets, such as bonds. This allows the rest of the world to buy more domestic assets later.