

*Principles of Economics 6th ed
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from trading with one another because trade allows each country to specialize in doing what it does best. But the analysis in Chapter 3 was incomplete. It did not explain how the international marketplace achieves these gains from trade or how the gains are distributed among various economic participants.

We now return to the study of international trade and take up these questions. Over the past several chapters, we have developed many tools for analyzing how markets work: supply, demand, equilibrium, consumer surplus, producer surplus, and so on. With these tools, we can learn more about how international trade affects economic well-being.

The Determinants of Trade

Consider the market for textiles. The textile market is well suited to examining the gains and losses from international trade: Textiles are made in many countries around the world, and there is much world trade in textiles. Moreover, the textile market is one in which policymakers often consider (and sometimes implement) trade restrictions to protect domestic producers from foreign competitors. We examine here the textile market in the imaginary country of Isoland.

The Equilibrium without Trade

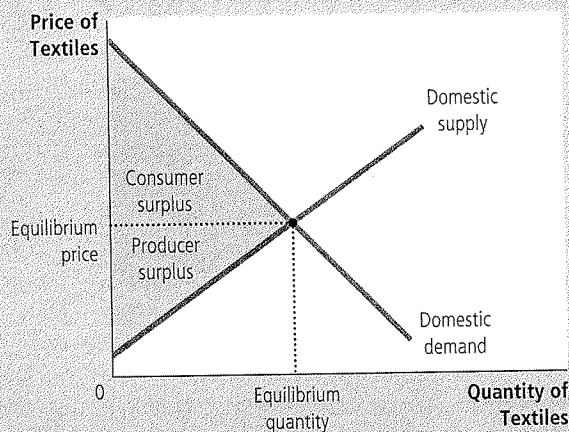
As our story begins, the Isolandian textile market is isolated from the rest of the world. By government decree, no one in Isoland is allowed to import or export textiles, and the penalty for violating the decree is so large that no one dares try.

Because there is no international trade, the market for textiles in Isoland consists solely of Isolandian buyers and sellers. As Figure 1 shows, the domestic price adjusts to balance the quantity supplied by domestic sellers and the quantity demanded by domestic buyers. The figure shows the consumer and producer surplus in the equilibrium without trade. The sum of consumer and producer surplus measures the total benefits that buyers and sellers receive from participating in the textile market.

Figure 1

The Equilibrium without International Trade

When an economy cannot trade in world markets, the price adjusts to balance domestic supply and demand. This figure shows consumer and producer surplus in an equilibrium without international trade for the textile market in the imaginary country of Isoland.



Now suppose that, in an election upset, Isoland elects a new president. The president campaigned on a platform of “change” and promised the voters bold new ideas. Her first act is to assemble a team of economists to evaluate Isolandian trade policy. She asks them to report on three questions:

- If the government allows Isolandians to import and export textiles, what will happen to the price of textiles and the quantity of textiles sold in the domestic textile market?
- Who will gain from free trade in textiles and who will lose, and will the gains exceed the losses?
- Should a tariff (a tax on textile imports) be part of the new trade policy?

After reviewing supply and demand in their favorite textbook (this one, of course), the Isolandian economics team begins its analysis.

The World Price and Comparative Advantage

The first issue our economists take up is whether Isoland is likely to become a textile importer or a textile exporter. In other words, if free trade is allowed, will Isolandians end up buying or selling textiles in world markets?

To answer this question, the economists compare the current Isolandian price of textiles to the price of textiles in other countries. We call the price prevailing in world markets the **world price**. If the world price of textiles is higher than the domestic price, then Isoland will export textiles once trade is permitted. Isolandian textile producers will be eager to receive the higher prices available abroad and will start selling their textiles to buyers in other countries. Conversely, if the world price of textiles is lower than the domestic price, then Isoland will import textiles. Because foreign sellers offer a better price, Isolandian textile consumers will quickly start buying textiles from other countries.

world price

the price of a good that prevails in the world market for that good

In essence, comparing the world price and the domestic price before trade indicates whether Isoland has a comparative advantage in producing textiles. The domestic price reflects the opportunity cost of textiles: It tells us how much an Isolandian must give up to obtain one unit of textiles. If the domestic price is low, the cost of producing textiles in Isoland is low, suggesting that Isoland has a comparative advantage in producing textiles relative to the rest of the world. If the domestic price is high, then the cost of producing textiles in Isoland is high, suggesting that foreign countries have a comparative advantage in producing textiles.

As we saw in Chapter 3, trade among nations is ultimately based on comparative advantage. That is, trade is beneficial because it allows each nation to specialize in doing what it does best. By comparing the world price and the domestic price before trade, we can determine whether Isoland is better or worse at producing textiles than the rest of the world.

QUICK QUIZ *The country Autarka does not allow international trade. In Autarka, you can buy a wool suit for 3 ounces of gold. Meanwhile, in neighboring countries, you can buy the same suit for 2 ounces of gold. If Autarka were to allow free trade, would it import or export wool suits? Why?*

The Winners and Losers from Trade

To analyze the welfare effects of free trade, the Isolandian economists begin with the assumption that Isoland is a small economy compared to the rest of the world. This small-economy assumption means that Isoland's actions have little effect on world markets. Specifically, any change in Isoland's trade policy will not affect the world price of textiles. The Isolandians are said to be *price takers* in the world economy. That is, they take the world price of textiles as given. Isoland can be an exporting country by selling textiles at this price or an importing country by buying textiles at this price.

The small-economy assumption is not necessary to analyze the gains and losses from international trade. But the Isolandian economists know from experience (and from reading Chapter 2 of this book) that making simplifying assumptions is a key part of building a useful economic model. The assumption that Isoland is a small economy simplifies the analysis, and the basic lessons do not change in the more complicated case of a large economy.

The Gains and Losses of an Exporting Country

Figure 2 shows the Isolandian textile market when the domestic equilibrium price before trade is below the world price. Once trade is allowed, the domestic price rises to equal the world price. No seller of textiles would accept less than the world price, and no buyer would pay more than the world price.

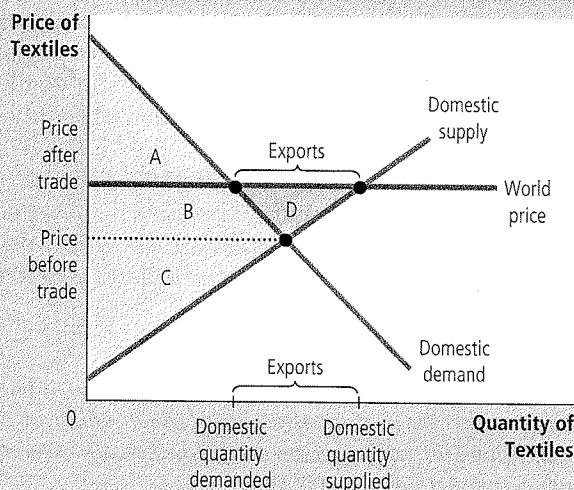
Figure 2

International Trade in an Exporting Country

Once trade is allowed, the domestic price rises to equal the world price. The supply curve shows the quantity of textiles produced domestically, and the demand curve shows the quantity consumed domestically. Exports from Isoland equal the difference between the domestic quantity supplied and the domestic quantity demanded at the world price. Sellers are better off (producer surplus rises from C to $B + C + D$), and buyers are worse off (consumer surplus falls from $A + B$ to A). Total surplus rises by an amount equal to area D , indicating that trade raises the economic well-being of the country as a whole.

	Before Trade	After Trade	Change
Consumer Surplus	$A + B$	A	$-B$
Producer Surplus	C	$B + C + D$	$+(B + D)$
Total Surplus	$A + B + C$	$A + B + C + D$	$+D$

The area D shows the increase in total surplus and represents the gains from trade.



After the domestic price has risen to equal the world price, the domestic quantity supplied differs from the domestic quantity demanded. The supply curve shows the quantity of textiles supplied by Isolandian sellers. The demand curve shows the quantity of textiles demanded by Isolandian buyers. Because the domestic quantity supplied is greater than the domestic quantity demanded, Isoland sells textiles to other countries. Thus, Isoland becomes a textile exporter.

Although domestic quantity supplied and domestic quantity demanded differ, the textile market is still in equilibrium because there is now another participant in the market: the rest of the world. One can view the horizontal line at the world price as representing the rest of the world's demand for textiles. This demand curve is perfectly elastic because Isoland, as a small economy, can sell as many textiles as it wants at the world price.

Now consider the gains and losses from opening up trade. Clearly, not everyone benefits. Trade forces the domestic price to rise to the world price. Domestic producers of textiles are better off because they can now sell textiles at a higher price, but domestic consumers of textiles are worse off because they have to buy textiles at a higher price.

To measure these gains and losses, we look at the changes in consumer and producer surplus. Before trade is allowed, the price of textiles adjusts to balance domestic supply and domestic demand. Consumer surplus, the area between the demand curve and the before-trade price, is area $A + B$. Producer surplus, the area between the supply curve and the before-trade price, is area C . Total surplus before trade, the sum of consumer and producer surplus, is area $A + B + C$.

After trade is allowed, the domestic price rises to the world price. Consumer surplus is reduced to area A (the area between the demand curve and the world price). Producer surplus is increased to area $B + C + D$ (the area between the supply curve and the world price). Thus, total surplus with trade is area $A + B + C + D$.

These welfare calculations show who wins and who loses from trade in an exporting country. Sellers benefit because producer surplus increases by the area $B + D$. Buyers are worse off because consumer surplus decreases by the area B . Because the gains of sellers exceed the losses of buyers by the area D , total surplus in Isoland increases.

This analysis of an exporting country yields two conclusions:

- When a country allows trade and becomes an exporter of a good, domestic producers of the good are better off, and domestic consumers of the good are worse off.
- Trade raises the economic well-being of a nation in the sense that the gains of the winners exceed the losses of the losers.

The Gains and Losses of an Importing Country

Now suppose that the domestic price before trade is above the world price. Once again, after trade is allowed, the domestic price must equal the world price. As Figure 3 shows, the domestic quantity supplied is less than the domestic quantity demanded. The difference between the domestic quantity demanded and the domestic quantity supplied is bought from other countries, and Isoland becomes a textile importer.

In this case, the horizontal line at the world price represents the supply of the rest of the world. This supply curve is perfectly elastic because Isoland is a small economy and, therefore, can buy as many textiles as it wants at the world price.

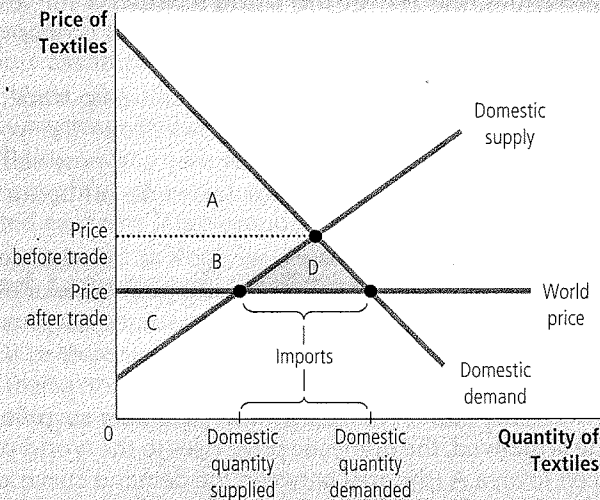
Figure 3

International Trade in an Importing Country

Once trade is allowed, the domestic price falls to equal the world price. The supply curve shows the amount produced domestically, and the demand curve shows the amount consumed domestically. Imports equal the difference between the domestic quantity demanded and the domestic quantity supplied at the world price. Buyers are better off (consumer surplus rises from A to $A + B + D$), and sellers are worse off (producer surplus falls from $B + C$ to C). Total surplus rises by an amount equal to area D , indicating that trade raises the economic well-being of the country as a whole.

	Before Trade	After Trade	Change
Consumer Surplus	A	$A + B + D$	$+(B + D)$
Producer Surplus	$B + C$	C	$-B$
Total Surplus	$A + B + C$	$A + B + C + D$	$+D$

The area D shows the increase in total surplus and represents the gains from trade.



Now consider the gains and losses from trade. Once again, not everyone benefits. When trade forces the domestic price to fall, domestic consumers are better off (they can now buy textiles at a lower price), and domestic producers are worse off (they now have to sell textiles at a lower price). Changes in consumer and producer surplus measure the size of the gains and losses. Before trade, consumer surplus is area A , producer surplus is area $B + C$, and total surplus is area $A + B + C$. After trade is allowed, consumer surplus is area $A + B + D$, producer surplus is area C , and total surplus is area $A + B + C + D$.

These welfare calculations show who wins and who loses from trade in an importing country. Buyers benefit because consumer surplus increases by the area $B + D$. Sellers are worse off because producer surplus falls by the area B . The gains of buyers exceed the losses of sellers, and total surplus increases by the area D .

This analysis of an importing country yields two conclusions parallel to those for an exporting country:

- When a country allows trade and becomes an importer of a good, domestic consumers of the good are better off, and domestic producers of the good are worse off.
- Trade raises the economic well-being of a nation in the sense that the gains of the winners exceed the losses of the losers.

Having completed our analysis of trade, we can better understand one of the *Ten Principles of Economics* in Chapter 1: Trade can make everyone better off. If Island

opens its textile market to international trade, the change will create winners and losers, regardless of whether Isoland ends up exporting or importing textiles. In either case, however, the gains of the winners would exceed the losses of the losers, so the winners could compensate the losers and still be better off. In this sense, trade *can* make everyone better off. But *will* trade make everyone better off? Probably not. In practice, compensation for the losers from international trade is rare. Without such compensation, opening an economy to international trade is a policy that expands the size of the economic pie, while perhaps leaving some participants in the economy with a smaller slice.

We can now see why the debate over trade policy is often contentious. Whenever a policy creates winners and losers, the stage is set for a political battle. Nations sometimes fail to enjoy the gains from trade because the losers from free trade are better organized than the winners. The losers may turn their cohesiveness into political clout, lobbying for trade restrictions such as tariffs or import quotas.

The Effects of a Tariff

The Isolandian economists next consider the effects of a **tariff**—a tax on imported goods. The economists quickly realize that a tariff on textiles will have no effect if Isoland becomes a textile exporter. If no one in Isoland is interested in importing textiles, a tax on textile imports is irrelevant. The tariff matters only if Isoland becomes a textile importer. Concentrating their attention on this case, the economists compare welfare with and without the tariff.

Figure 4 shows the Isolandian market for textiles. Under free trade, the domestic price equals the world price. A tariff raises the price of imported textiles above the world price by the amount of the tariff. Domestic suppliers of textiles, who compete with suppliers of imported textiles, can now sell their textiles for the world price plus the amount of the tariff. Thus, the price of textiles—both imported and domestic—rises by the amount of the tariff and is, therefore, closer to the price that would prevail without trade.

The change in price affects the behavior of domestic buyers and sellers. Because the tariff raises the price of textiles, it reduces the domestic quantity demanded from Q_1^D to Q_2^D and raises the domestic quantity supplied from Q_1^S to Q_2^S . *Thus, the tariff reduces the quantity of imports and moves the domestic market closer to its equilibrium without trade.*

Now consider the gains and losses from the tariff. Because the tariff raises the domestic price, domestic sellers are better off, and domestic buyers are worse off. In addition, the government raises revenue. To measure these gains and losses, we look at the changes in consumer surplus, producer surplus, and government revenue. These changes are summarized in the table in Figure 4.

Before the tariff, the domestic price equals the world price. Consumer surplus, the area between the demand curve and the world price, is area $A + B + C + D + E + F$. Producer surplus, the area between the supply curve and the world price, is area G . Government revenue equals zero. Total surplus, the sum of consumer surplus, producer surplus, and government revenue, is area $A + B + C + D + E + F + G$.

Once the government imposes a tariff, the domestic price exceeds the world price by the amount of the tariff. Consumer surplus is now area $A + B$. Producer surplus is area $C + G$. Government revenue, which is the quantity of after-tariff imports times the size of the tariff, is the area E . Thus, total surplus with the tariff is area $A + B + C + E + G$.

tariff

a tax on goods produced abroad and sold domestically