Again, winners and losers will result from the removal of trade restrictions, but the gains for the winners will be larger than the losses for the losers. Removing trade restrictions therefore eliminates deadweight loss.

**Tariffs**

The oldest and most common method by which a government restricts trade is the tariff, a tax on goods imported into a country. The higher the tariff, the more trade is restricted. An **ad valorem tariff** is a tax equal to a certain percentage of the value of the good. For example, a 15 percent tariff on the value of goods imported is an ad valorem tariff. If $100,000 worth of goods is imported, the tariff revenue is $15,000. A **specific tariff** is a tax on the quantity sold, such as $0.50 for each kilogram of zinc.

The economic effects of a tariff are illustrated in Figure 29-9. We consider a particular good—automobiles, for example—that is exported from one country (Japan, for example) and imported by another country (the United States, for example). An import demand curve and an export supply curve are shown in Figure 29-9. The import demand curve gives the quantity of imported goods that will be demanded at each price. It shows that a higher price for imported goods will reduce the quantity of the goods demanded. A higher price for Nissans and Toyotas, for example, will lead to a smaller quantity of Nissans and Toyotas demanded by Americans. Like the standard demand curve, the import demand curve is downward sloping.

**Figure 29-8**

**Gains from Trade Because of Larger Markets**

When trade occurs, the market increases from the size of the market in one country to the combined size of the market in two or more countries. This larger market shifts the upward-sloping line down because cost per unit for each firm is lower when the market is bigger. In the long-run equilibrium at the intersection of the two new curves, the price is lower and more firms are in the market. With more firms, more variety is achieved. Lower price and more variety are the gains from trade.

---

*Tariffs and Quotas* 757
The export supply curve gives the quantity of exports that foreign firms are willing to sell at each price. In the case of Nissans and Toyotas, the export supply curve gives the quantity of Nissans and Toyotas that Japanese producers are willing to sell in the United States. The supply curve is upward sloping, just like any other supply curve, because foreign producers are willing to supply more cars when the price is higher.

In equilibrium, for any single type of good, the quantity of exports supplied must equal the quantity of imports demanded. Thus, the intersection of the export supply curve and the import demand curve gives the amount imported into the country and the price.

When the government imposes a tariff, the supply curve shifts up, as shown in Figure 29-9. The tariff increases the marginal cost of supplying cars to the United States. The amount of the tariff in dollars is the amount by which the supply curve shifts up; it is given by the length of the green arrow in Figure 29-9.

The tariff changes the intersection of the export supply curve and the import demand curve. At the new equilibrium, a lower quantity is imported at a higher price. The price consumers pay for cars rises, but the increase in the price is less than the tariff. The upward-pointing black arrow shows the price increase. The green arrow, which shows the tariff increase, is longer than the black arrow along the vertical axis. The size of the price increase depends on the slopes of the demand curve and the supply curve.

The price received by suppliers equals the price paid by consumers less the tariff that must be paid to the government. Observe that the price received by the sellers declines as a result of the tariff.

The amount of revenue that the government collects is given by the quantity imported times the tariff, which is indicated by the shaded rectangle in Figure 29-9. For example, if the tariff is $1,000 per car and 1 million cars are imported, the revenue is $1 billion. Tariff revenues are called duties and are collected by customs.
The tariff also has an effect on U.S. car producers. Because the tariff reduces imports from abroad and raises their price, the demand for cars produced by import-competing companies in the United States—General Motors or Ford—increases. This increase in demand will raise the price of U.S. cars. Thus, consumers pay more for both imported cars and domestically produced cars.

**Quotas**

Another method of government restriction of international trade is the *quota*. A quota sets a limit, a maximum, on the amount of a given good that can be imported. The United States has quotas on the import of ice cream, sugar, cotton, peanuts, and other commodities. Foreigners can supply only a limited amount of these goods to the United States.

The economic effect of a quota is illustrated in Figure 29-10. The export supply curve and the import demand curve are identical to those in Figure 29-9. The quota, the maximum that foreign firms can export to the United States, is indicated in Figure 29-10 by the solid orange vertical line labeled “quota.” Exporters cannot supply more goods than the quota, and, therefore, U.S. consumers cannot buy more than this amount. We have chosen the quota amount to equal the quantity imported with the tariff in Figure 29-9. This shows that if it wants to, the government can achieve the same effects on the quantity imported using either a quota or a tariff. Moreover, the price increase in Figure 29-10, represented by the black arrow along the vertical axis, is the
The goal of the World Trade Organization (WTO) is to reduce trade barriers. But not everyone agrees with the goal, as the protest against the WTO meeting in Seattle reminded us. Although large antitrade protests have been less common in recent years, protectionist or isolationist sentiments continue to build as people worry about competition from China and other developing countries.

**Figure 29-10**

**The Effects of a Quota**

A quota can be set to allow the same quantity of imports as a tariff. The quota in this figure and the tariff in Figure 29-9 allow the same quantity of imports into the country. The price increase is the same for the quota and the tariff. But, in the case of a quota, the revenue goes to quota holders, not to the U.S. government.
same as the price increase in Figure 29-9. Viewed from the domestic market, therefore, a quota and a tariff are equivalent. If the quota is set to allow in the same quantity of imports as the tariff, then the price increase will be the same. Consumers will pay more for imports in both cases, and the demand for domestically produced goods that are substitutes for imports will increase. The price of domestically produced cars also will increase if a quota is set on foreign cars.

Then what is the difference in the effects of a tariff and a quota? Unlike the situation with a tariff, no revenue goes to the government with a quota. The difference between the price that the foreign suppliers get and the higher price that the consumers pay goes to the holders of the quota—the ones who are allowed to import into the country. Foreign countries frequently hold the quotas. The revenue the quota holders get is indicated by the shaded rectangle in Figure 29-10. It is equal to the quantity imported times the difference between the price paid by the consumers and the price received by the producers. The size of that rectangle is identical to the size of the rectangle showing the revenue paid to the government in the case of the tariff in Figure 29-9.

On January 1, 2005, the 1973 Multi-Fiber Agreement, a set of quotas on textiles and apparel, expired. This system of global quotas restricting imports added an estimated 20 percent to the cost of clothing, while benefiting companies in places like the Philippines that specialized in supplying clothing under this quota system. The lifting of the quotas created widespread fears among U.S. and European Union clothing manufacturers about the flood of cheap Chinese apparel into these markets. A coalition of U.S. producers claimed that 650,000 jobs were at risk. Since then, the European Union and the United States have both struggled to find a solution that will work for China and for domestic manufacturers, retailers, and consumers.
Since the expiration of the quotas, exports from China have surged, adding to downward pressure on prices of clothing in the United States. In contrast, exports from countries like the Philippines and Sri Lanka, that previously had quotas, have suffered. The surge in exports from China has caused U.S. clothing producers to lobby for new quotas though U.S. clothing retailers are opposed to them. If you were determining trade policy, how would you view this trade-off between U.S. clothing prices and U.S. clothing production?

The Costs of Trade Restrictions

Trade barriers, such as tariffs and quotas, distort prices and reduce the quantity consumed, benefiting domestic producers at the expense of domestic consumers and foreign producers. For example, the United States imposes quotas on sugar to increase the price of domestic sugar beets and sugar cane. Producers receive $1 billion a year in additional surplus as a result of higher prices, but U.S. consumers lose $1.9 billion, for a net loss of $.9 billion to the United States.

The Multi-Fiber Agreement, which ended in January 2005, was another trade restriction that had substantial implications for U.S. consumers. The estimated loss to U.S. consumers was $24 billion a year, and the cost to the U.S. economy was around $10 billion a year.

**REVIEW**

- The most common ways for government to restrict foreign trade are tariffs and quotas. Each has the same effect on price and quantity.
- With a tariff, the revenue from the tariff goes to the government. With a quota, that revenue goes to quota holders.
- Trade restrictions alter the allocation of resources in the economy and are significant sources of dead-weight loss.

**The History of Trade Restrictions**

As discussed, tariffs are the oldest form of trade restriction. Throughout history, governments have used tariffs to raise revenue. **Revenue tariffs**, whose main purpose is raising revenue, were by far the most significant source of federal revenue in the United States before the income tax was made constitutional by the Sixteenth Amendment to the U.S. Constitution in 1913 (see Figure 29-11). Revenue tariffs are still common in developing countries because they are easy for the government to collect as the goods come through a port or one of a few checkpoints.

**U.S. Tariffs**

Tariffs are a big part of U.S. history. Even before the United States was a country, a tariff on tea imported into the colonies led to the Boston Tea Party. One of the first acts of the U.S. Congress placed tariffs on imports. Figure 29-12 summarizes the history of tariffs in the United States since the early 1800s.

**From the Tariff of Abominations to Smoot-Hawley** Tariffs were high throughout much of U.S. history, rarely going below 20 percent in the nineteenth century. In addition to raising revenue, these tariffs reduced imports of manufactured