

# Chapter Nine

## Nontariff Barriers to Imports

Protecting domestic producers against import competition

- Clearly helps those producers.
- Harms domestic consumers of the products.
- Probably hurts the importing nation as a whole.
- Almost surely hurts the world as a whole.

So it is with a typical tariff barrier, as suggested in Chapter 8, and so it is with other kinds of barriers against imports that we will analyze in this chapter. Knowing this, you might expect that protectionist interests will have most sway at the national or even local level, while the interests of consumers and the world as a whole will be better defended at the global level. That is in fact the case.

This chapter has three major purposes:

- To examine various kinds of nontariff barriers to imports and their effects.
- To survey evidence on how large the deadweight losses from protectionism actually are.
- To discuss the role of the World Trade Organization (and the General Agreement on Tariffs and Trade, which came before it) as the locus of global agreements to liberalize trade.

Those agreements have succeeded in cutting tariffs. But as tariffs have declined, the use of nontariff import barriers to provide protection has increased. Global trade agreements have only recently tried to reduce these nontariff barriers, and they have not made nearly so much progress against them as they have against tariffs.

### TYPES OF NONTARIFF BARRIERS TO IMPORTS

A **nontariff barrier (NTB)** to imports is any policy used by the government to reduce imports, other than a simple tariff on imports. Nontariff barriers can take many forms, including import quotas, discriminatory product standards, buy-at-home rules for government purchases, and administrative red tape to harass importers of foreign products.

An NTB reduces imports by operating through one or more of the following channels:

- Limiting the quantity of imports.
- Increasing the cost of getting imports into the market.
- Creating uncertainty about the conditions under which imports will be permitted.

Figure 9.1 provides a listing of major types of NTBs and indicates the main way that each affects imports. Although antidumping duties and countervailing duties are not listed in the figure, they are also often considered NTBs. Because governments claim that they impose these kinds of duties in response to unfair practices by foreign exporters, we defer an in-depth discussion of antidumping and countervailing

Figure 9.1

**FIGURE 9.1** Major Types of NTBs

Type	What It Is	Channel of Effects
Import quota	Quantitative limit on imports	Quantity
Voluntary export restraint (VER)	Quantitative limit on exports (based on threat of import restriction)	Quantity
Tariff-quota	Allows imports to enter the country at a low or zero tariff up to a specified quantity; imposes a higher tariff on imports above this quantity	Quantity (if the tariff for potential imports above the specified quantity is so high that it is prohibitive, so that there are no imports above the specified quantity)
Government procurement	Laws and government rules that favor local products when the government is the buyer	Quantity (for instance, an outright prohibition) Cost of importing (for instance, special procedures for imports)
Local content and mixing requirements	Require specified use of local labor, materials, or other products	Quantity
Technical and product standards	Discriminate against imports by writing or enforcing standards in a way that adversely affects imports more than domestic products	Cost (to conform to standards or demonstrate compliance) Uncertainty (if approval procedures are unclear)
Advance deposit	Requires some of the value of intended imports to be deposited with the government, and allows the government to pay low- or zero-interest on these deposits	Cost (foregone interest)
Import licensing	Requires importers to apply for and receive approval for intended imports	Cost (of application procedure) Uncertainty (if basis for approval is unclear)
Other customs procedures (classification of product, valuation of product, procedures for clearing)	Affect the amount of tariff duties or the quota limit applied; owed procedures can be slow or costly	Cost Uncertainty

duties to Chapter 11. Here we will examine carefully several types of NTBs listed in Figure 9.1.

## THE IMPORT QUOTA

The best-known nontariff barrier is the **import quota** (or just **quota**), a limit on the total quantity of imports of a product allowed into the country during a period of time (for instance, a year). One way or another, the government gives out a limited number of licenses to import the quota quantity legally and prohibits importing without a license. As long as the quota quantity is less than the quantity that people would want to import without the quota, the quota has an impact on the market for this product.

There are several reasons why protectionists and government officials may favor using a quota instead of a tariff. For instance,

- A quota ensures that the quantity of imports is strictly limited; a tariff would allow import quantity to increase if foreign producers cut their prices or if our domestic demand increases.
- A quota gives government officials greater power. As we will see below, these officials often have administrative authority over who gets the import licenses under a quota system, and they can use this power to their advantage (for instance, by taking bribes).

Note that these are not arguments showing that an import quota is in the national interest.

Let's compare the quota to a tariff as a way of impeding imports. As we saw in Chapter 8, a tariff increases the domestic price of the imported product and reduces the quantity imported. A quota reduces the quantity imported. Does a quota also increase the domestic price of the imported product? We will see that the answer is yes. In fact, we will see that, in most ways, the effects of a quota are the same as the effects of a tariff that leads to the same quantity of imports as the quota, if markets are perfectly competitive.

As we did with the analysis of the tariff, we begin our analysis of the quota with the small-country case and then proceed to the large-country case. Our analysis in the text assumes that all relevant markets are highly competitive. (The box "A Domestic Monopoly Prefers a Quota" examines an alternative case.)

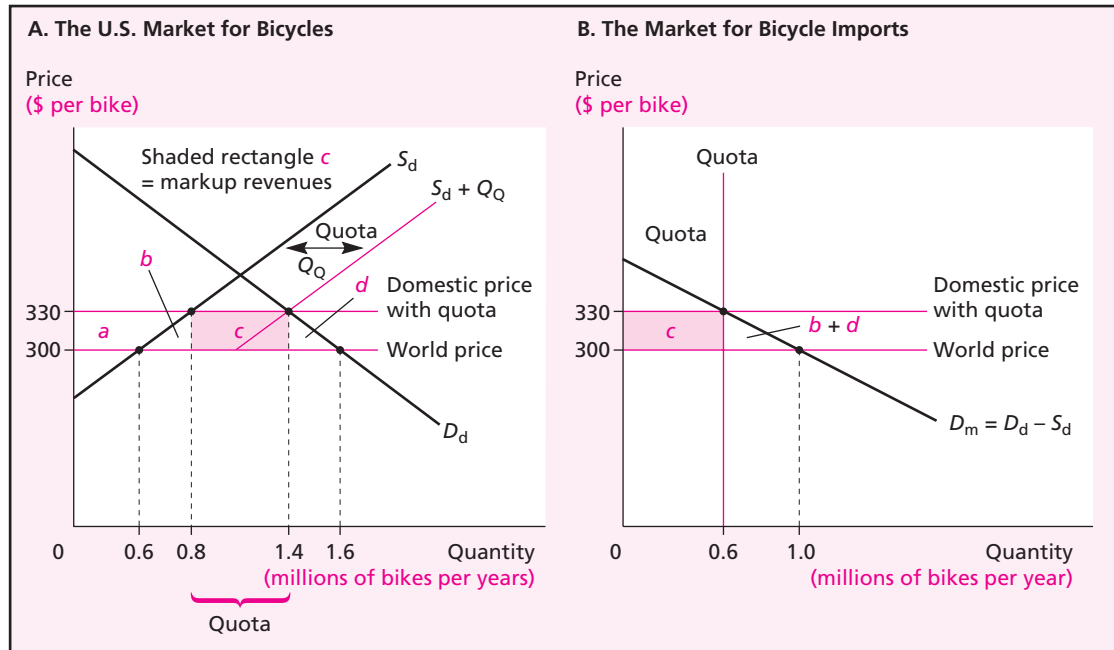
### Quota versus Tariff for a Small Country

The effects of a quota on bicycles are portrayed in Figure 9.2 for a small importing country facing a given world price of \$300 per bicycle. Recall that a country is "small" if its decisions about how much to import of a product have no effect on the going world price of the product. That is, the foreign supply of exports to this small country is infinitely elastic at this price. In our example in Figure 9.2, the country would import 1.0 million bikes per year with free trade. The government then imposes a quota that limits imports to a smaller quantity, say, 0.6 million bikes per year.

The quota alters the available supply of bicycles within the importing country. For all domestic prices above the world price, the total (domestic plus import) supply within the country equals the domestic supply curve plus the fixed quota quantity ( $Q_Q$ ) of imports. At the world price of \$300 there would be excess demand for bicycles in

Figure 9.2

**FIGURE 9.2** The Effects of an Import Quota under Competitive Conditions, Small Importing Country



A quota cuts off the supply of imports by placing an absolute limit ( $Q_Q$ ) on what can be bought from abroad. Under the competitive conditions shown here, the effects of an import quota are the same as those of a tariff that cuts imports just as much (with the possible exception of who gets shaded area *c*). To see this, compare the prices, quantities, and areas *a*, *b*, *c*, and *d* shown here with those shown in Figure 7.4.

the importing country. The market in the importing country will clear only at the higher price of \$330, as shown by the intersection of the total available supply curve ( $S_d + Q_Q$ ) and the domestic demand curve ( $D_d$ ) on the left side of Figure 9.2. At the domestic price of \$330, the domestic quantity supplied is 0.8 million, the quantity imported is the quota quantity of 0.6 million, and the domestic quantity demanded is 1.4 million. (We can see the same effect on domestic price by using the country's demand-for-imports curve shown in the right side of the figure. If the quota limits imports to 0.6 million, then the demand for imports indicates a price of \$330.)

These effects on domestic price and quantities should sound familiar. They are the same as the effects of the 10 percent tariff shown in Figures 8.2 through 8.4. For a competitive market, the effects of a quota on price, quantities, and well-being are the same as those of an equivalent tariff, with one possible exception. Here are the effects that are the same. In comparison with free trade:

- The quota results in a higher price and larger production quantity, so domestic producers gain surplus equal to area *a*.
- With the higher price and smaller consumption quantity, domestic consumers lose surplus equal to area  $a + b + c + d$ .

- Area  $b$  is a loss to the country. The quota induces domestic producers to increase production from 0.6 to 0.8 million. The marginal costs of producing these additional bicycles at home rise up to \$330 (along  $S_d$ ), when these additional bicycles instead could be purchased from foreign exporters for only \$300.
- Area  $d$  is also a loss to the country. The quota reduces quantity consumed from 1.6 million to 1.4 million. The consumer surplus lost on these bicycles is not a gain to anyone else.

Therefore, the quota creates the same two deadweight losses ( $b + d$ ), as does the tariff.

This leaves rectangular area  $c$ , the “possible exception” to the equivalence. With a tariff, area  $c$  is government tariff revenue. With a quota, what is it? Who gets it?

### Ways to Allocate Import Licenses

The quota license to import is a license to buy the product from foreign suppliers at the world price of \$300 and resell these units at the domestic price of \$330. The quota results in a price markup (or economic rent) of \$30 per unit imported. For all units imported with the quota, the markup totals to rectangular area  $c$ .

Who gets this rectangle of price markup? That depends on how the licenses to import the quota quantity are distributed. Here are the main ways to allocate import licenses<sup>1</sup>:

- The government allocates the licenses for free to importers using a rule or process that involves (almost) no resource costs.
- The government auctions off the licenses to the highest bidders.
- The government allocates the licenses to importers through application and selection procedures that require the use of substantial resources.

Let’s look at each of these, examining who gets area  $c$  and whether this affects our view of the inefficiency of the quota.

#### *Fixed Favoritism*

Import licenses adding up to the total quota can be allocated for free on the basis of **fixed favoritism**, in which the government simply assigns the licenses to firms (and/or individuals) without competition, applications, or negotiation. In this case the importers lucky enough to receive the import licenses will get area  $c$ . Each of them should be able to buy from some foreign exporter(s) at the world price (playing different foreign exporters off against each other if any one of them tries to charge a higher price). The importers can resell the imports at the higher domestic price. The price difference is pure profit (\$30 per bike in our example). Area  $c$  is then a redistribution of well-being from domestic consumers in the importing country to the favored importers with the quota licenses. Using the one-dollar, one-vote metric, this method of allocating the quota licenses does not create any additional inefficiency (as long as no resources are used up in allocating the quota rights).

<sup>1</sup> There is a fourth way that the quota licenses might be distributed. The importing country government could allocate the licenses to the exporting firms (or to others in the exporting country). In this case (but not in the three cases shown in the text), the exporters ought to be able to raise their export price, so this fourth case is essentially the same as that of the voluntary export restraint discussed in the next major section of this chapter.

## Extension A Domestic Monopoly Prefers a Quota

The analysis of an import quota presented in the text presumes that the domestic industry in the importing country is highly competitive. With perfect competition we saw that the effect of the quota on domestic producer surplus is the same as the effect of a tariff that results in the same quantity of imports. In this case the domestic industry would not have a strong preference between the quota and the equivalent tariff.

Domestic industries are often highly competitive, but not always. Especially for a small country, in some industries no more than one or two domestic firms can achieve scale economies in production if they are selling only to local consumers. This would be true for industries like automobiles or steel.

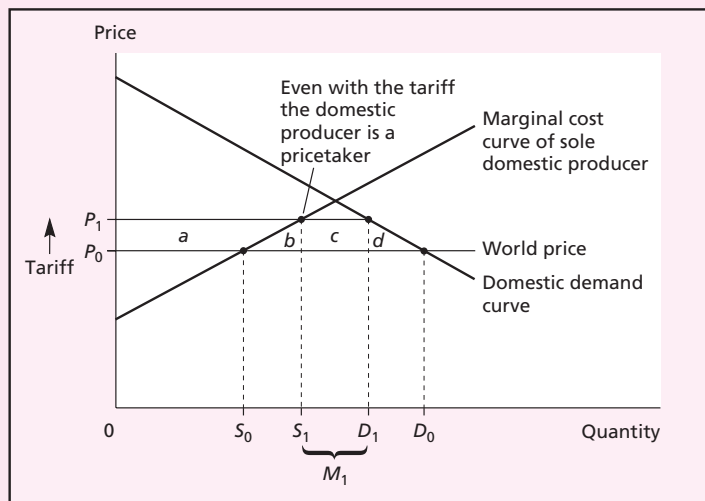
If the domestic industry is a monopoly, would the monopoly have a preference between a tariff and a quota? The answer is yes. The monopoly prefers the quota (even if the monopoly does not get any of the price markup on the imports themselves). Let's look at this more closely. (We assume that the importing country is a small country, but the same idea holds for the large-country case.)

The domestic monopoly would like to use its market power to set the domestic price to maximize its profits. But with *free trade* the world price becomes the domestic price. Imports entering the

country at the world price prevent the domestic monopoly from charging a higher price than the world price. If it did try to charge a higher price, most consumers would just buy imports. Free trade is a good substitute for national antitrust or antimonopoly policy.

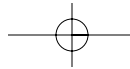
If the country's government imposes a *tariff*, the domestic price rises to be the world price plus the tariff. The pricing power of the monopoly is still severely limited. If the monopoly tries to charge more than this tariff-inclusive price, again most consumers would just buy imports. Domestic consumers can buy as much of the imported product as they wish, as long as they are willing to pay the tariff-inclusive price. They will not pay more for the locally produced product.

If instead the country's government imposes a *quota*, the whole game changes. No matter how high the monopoly raises its domestic price, imports cannot exceed the quota quantity. Domestic consumers cannot just shift to imports, because there is a strict limit on how much they can import. The marginal source of more of the product is now the domestic monopoly. After allowing for the quota quantity of imports, the domestic monopoly can set the domestic price to maximize its profits. In comparison to a tariff that results in the same quantity of imports, the domestic monopoly



Tariff, domestic monopoly

Figure reduced 10%



prefers an import quota, because the monopoly can set a higher price and garner larger profits. However, these higher profits come at a cost to the importing country as a whole. If the domestic industry is a monopoly, the quota causes a larger net national loss.

A pair of graphs for the domestic monopoly can highlight the differences between the tariff and the quota. The figure on the previous page shows the case of the tariff. With free trade at the world price  $P_0$ , the monopolist cannot charge a price higher than  $P_0$ , so the monopoly produces all units for which its marginal costs are less than this free-trade price. The tariff raises the domestic price to  $P_1$ , but the monopolist cannot charge a higher price than this tariff-inclusive price. The monopolist increases production from  $S_0$  to  $S_1$  and increases its profits by area  $a$ . Imports with the tariff are  $M_1$ . The net loss in national well-being because of the tariff equals area  $b + d$ .

The figure below shows what happens if this same  $M_1$  quantity of imports is instead set as a quota. With the fixed quota quantity of imports, the monopoly views its market as domestic demand less this quota quantity (for all prices above the world price  $P_0$ ). That is, the monopoly faces the downward-sloping net demand curve (the domestic demand curve minus the quota quantity). Using the net demand curve, the monopoly can determine the marginal revenue from lowering

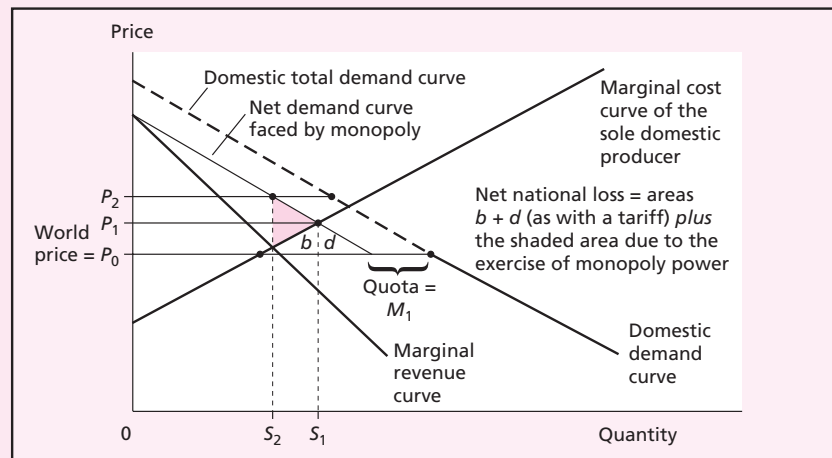
price to sell additional units. The monopoly maximizes profit when marginal revenue equals marginal cost, producing and selling quantity  $S_2$  and charging price  $P_2$ .

In comparison with the tariff, the monopoly uses the quota to increase the product price ( $P_2 > P_1$ ), to reduce the quantity that it produces and sells ( $S_2 < S_1$ ), and to increase its profit. The monopoly prefers the quota, but the monopoly's gain comes with some additional social cost. In comparison with the tariff, the economic inefficiency of the quota is larger. The nation as a whole loses not only area  $b + d$  but also the shaded area. The shaded area is the additional social loss from unleashing the monopoly's power to restrict production and raise prices. Additional consumers are squeezed out of the market, and they suffer an additional loss of consumer surplus that is not a gain for any other group.

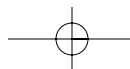
We can combine this conclusion with the conclusions reached in the text. For the nation as a whole, at best the quota is no worse than an equivalent tariff as a way of impeding imports. The import quota is worse than the tariff in two cases:

- If quota licenses are allocated through resource-using application and selection procedures.
- If a dominant domestic firm can use the quota to assert its monopoly pricing power.

Figure reduced 10%



Import quota, domestic monopoly



One common way of fixing the license recipients and amounts is to give the licenses to firms that were doing the importing before the quota was imposed, in the same proportion to the amounts that they had previously been importing. This is how the U.S. government ran its oil import quotas between 1959 and 1973. Licenses to import were simply given to companies on the basis of the amount of oil they had imported before 1959. There is a political reason for allocating import licenses in this way. The importers generally will be hurt by the imposition of a quota, and they would then be a group opposing the quota. However, if they receive the valuable quota licenses, they are much less likely to oppose the quota. Although they will have a lower volume of import business, the importing that they do will be very profitable.

### *Auction*

The government can run an **import-license auction**, selling import licenses on a competitive basis to the highest bidders. Would someone be willing to pay something to buy a quota license? Yes, because the right to acquire imports at the low world price and sell these imports at the higher domestic price is valuable. How much would some individuals be willing to pay in a competitive auction? An amount very close to the price difference—in our example, an amount very close to \$30 per bike. If the winning bids in the auction are very close to this price difference, who gets area  $c$ ? The government gets (almost all of) it, in the form of auction revenues. In this case, the auction revenues to the government will be (almost) equal to the revenues that the government would instead collect with the equivalent tariff.

Public auctions of import-license auctions are rare. They were used in Australia, New Zealand, and Colombia in the 1980s. In New Zealand, once or twice a year the government auctioned the rights to import over 400 different goods. For a sample of these auctions for which data are available, the bidders paid, on average, about 20 percent of the world price to acquire the quota licenses. The quotas for these products were equivalent to an average tariff of about 20 percent.

There is an informal variant of a quota auction that is probably more prevalent. Corrupt government officials can do a thriving business by selling import licenses “under the table” to whoever pays them the highest bribes. As with other forms of corruption, this variant of the auction entails some social costs that go beyond economic market inefficiency. Persistent corruption can cause talented persons to become bribe-harvesting officials instead of pursuing productive careers. Public awareness of corruption also raises social tensions over injustice in high places.

### *Resource-Using Procedures*

Instead of holding an auction, the government can insist that firms (and/or individuals) that want to acquire licenses must compete for them in some way other than simple bidding or bribing. **Resource-using application procedures** include allocating quota licenses on a first-come, first-served basis; on the basis of demonstrating need or worthiness; or on the basis of negotiations. With first-come, first-served allocation, those seeking the licenses use resources to try to get to and stay at the front of the line. An example of allocation by worthiness is awarding quota licenses for materials or

components based on how much production capacity firms have for producing the products that use these inputs. This approach encourages resource wastage because it causes firms to overinvest in production capacity in the hope of obtaining more quota licenses. An example of resource wastage from negotiation is the time and money spent on lobbying with government officials to press each firm's case for receiving quota licenses.

What amount of resources would be used by firms seeking quota licenses? It would be rational for the firms to use resources up to the value of the licenses themselves—that is, up to the value of area  $c$ . Using resources in this way is privately sensible for each individual firm seeking to get the economic rents created by the licenses. But, from the point of view of the entire country, these *resources used up in the rent-seeking activities are being wasted* (compared to the other two ways of allocating quota licenses, or compared to having no quota at all).

Resource-using procedures encourage rent-seeking activities, and some or all of area  $c$  is turned into a loss to society by wasting productive resources. The *inefficiency of the quota is greater than area  $b + d$ , because it also includes some of area  $c$* . In this case the quota is worse than the equivalent tariff in its effects on net national well-being.

### Quota versus Tariff for a Large Country

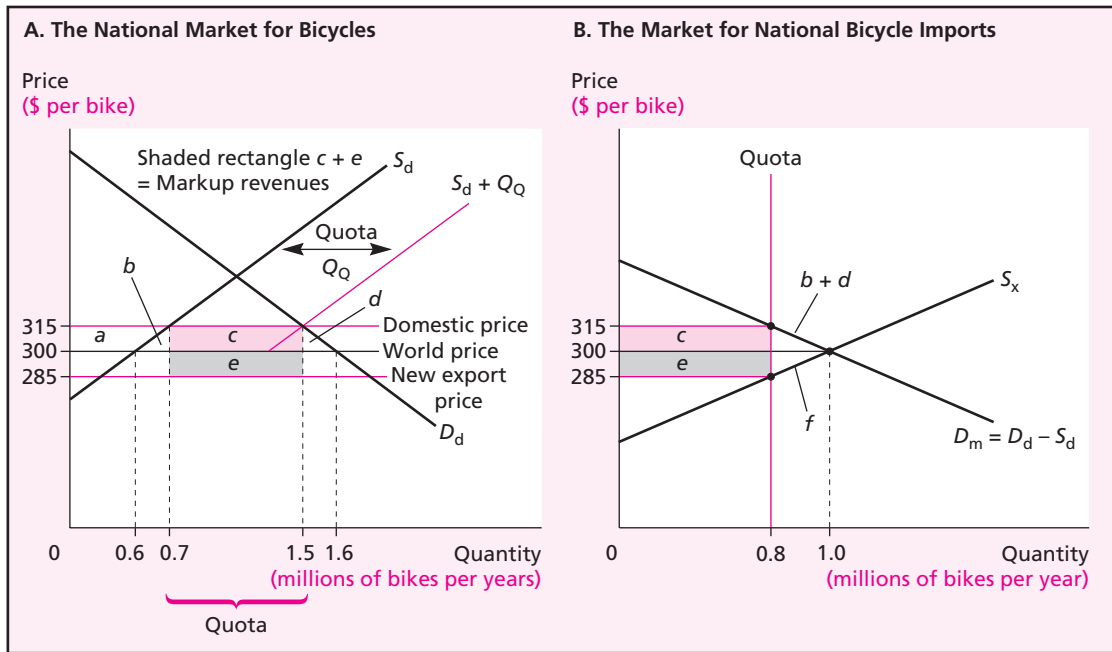
Figure 9.3 shows the effects of a quota for a country whose import demand for this product is large enough to affect world prices. A large country faces an upward-sloping foreign supply-of-exports curve. With free trade, the country would import 1.0 million bicycles per year and the world price would be \$300 per bicycle. The government then imposes an import quota that reduces the import quantity to 0.8 million bicycles. By looking at the right-hand side of Figure 9.3, we see the effects of the quota on prices. Domestic import buyers will pay \$315 per bicycle if the import quantity is limited to 0.8 million. Foreign exporters will compete among themselves to make this limited amount of export sales, and they will bid the export price down to \$285.

We can use these prices and the left-hand side of Figure 9.3 to see what is happening in the domestic market for the country that is importing bicycles. When the domestic price increases to \$315, domestic quantity supplied increases to 0.7 million and domestic quantity consumed decreases to 1.5 million.

We can compare a quota to its equivalent tariff for the large country case, by comparing Figure 9.3 to Figure 8.5. We reach the same general conclusion for the large-country case that we reached for the small-country case. With the same exception of who gets the price markup from the quota (area  $c + e$  in the large-country case), the effects of the quota are the same as those of the equivalent tariff. If the quota licenses can be distributed with minimal resource costs, then the effect on net national well-being of the import quota is the gain of area  $e$  less the loss of area  $b + d$ . If the exporters are passive, then a large country can gain net national well-being by imposing an import quota, and there is an optimal quota that maximizes the gain in national well-being. Using the tariff-quota equivalence, Figure 8.6, which shows the nationally optimal tariff, also tells us that the nationally optimal quota here is 0.67 million bicycles per year. The cautions for the use of an optimal quota are the same as those for

Figure 9.3

**FIGURE 9.3** The Effects of an Import Quota Under Competitive Conditions, Large Importing Country



Under the competitive conditions shown here, the effects of an import quota are the same as those of a tariff that cuts imports just as much (with the possible exception of who gets shaded area  $c + e$ ). To see this, compare the prices, quantities, and areas  $a$ ,  $b$ ,  $c$ ,  $d$ ,  $e$ , and  $f$  shown here with those shown in Figure 8.5.

the optimal tariff. The quota hurts the foreign country, and the foreign country may choose to retaliate. Even if the foreign country does not retaliate, the quota causes worldwide inefficiency. In comparison with free trade, the loss in world well-being is area  $b + d$  plus area  $f$  in the right-hand side of Figure 9.3.

## VOLUNTARY EXPORT RESTRAINTS (VERs)

A **voluntary export restraint (VER)** is an odd-looking trade barrier in which the importing country government coerces the foreign exporting country to agree “voluntarily” to restrict its exports to this country. The export restraint usually requires that foreign exporting firms act like a cartel, restricting sales and raising prices. Yes, that’s right—through the VER the importing country actually gives foreigners monopoly power, forces them to take it, and calls their compliance voluntary!

VERs are used by large countries as a rear-guard action to protect their industries that are having trouble competing against a rising tide of imports. As a good example of this, the box on “VERs in Textiles and Clothing” describes the pervasive set of export quotas that existed in that sector for almost half a century.

Since the late 1960s a series of domestic industries, including steel and automobiles, lobbied the U.S. government for import limits as they faced rising import competition.

The U.S. government wanted to avoid the embarrassment of imposing import quotas or raising tariffs. These actions would violate the international rules of the World Trade Organization and would contradict general U.S. support for freer trade. For a number of products, the U.S. government instead pressured foreign suppliers to limit the quantity of their exports to the U.S. market. (The box “Auto VER: Protection with Integrity?” provides information on the background and effects of Japan’s export limits for cars.)

In addition to the United States, the European Union and Canada have used VERs as a major form of import restriction. The countries most often forced to restrict their exports have been Japan, Korea, and the transition countries of Central and Eastern Europe. In addition to textiles and clothing, the products most often restricted have been agricultural products, steel, footwear, electronics, and machine tools. As part of the Uruguay Round agreement, the industrialized countries have committed to phase out the use of VERs.

The graphical analysis of a VER is very similar to that of an import quota. For instance, we can use Figure 9.2 to show the effects of a VER for a small importing country. The amount  $Q_Q$  is now the export quota imposed by the VER. (Similarly, the graphs showing the effects of the VER for a large importing country would be nearly identical to Figure 9.3.)

Consider the small importing country shown in Figure 9.2. The two key differences between a VER (or any other form of export quota) and an import quota are the *effect on the export price* and *who gets area  $c$* , the price markup or economic rent created by the quantitative limit on trade. Recall that with an import quota the quota rights to import are given to importers. If foreign export supply is competitive, these importers should be able to buy at the world price (\$300 in our bicycle example) and sell these imports domestically at the higher price (\$330). The price markup (area  $c$ ) stays within the importing country.

With the VER, the exporting country’s government usually distributes licenses to export specified quantities to its producers. The export producers should realize that there is much less incentive to compete among themselves for export sales. Instead, they should act like a cartel that has agreed to limit total sales and to divide up the market. Faced with limited export quantity (0.6 million bikes in Figure 9.2), the exporters should charge the highest price that the market will bear. *The export price rises to \$330, the highest price that import demanders will pay for this quantity. Therefore, the foreign exporters now get area  $c$  as additional revenue on the VER-limited quantity of exports.*<sup>2</sup>

Footnote 2

How does the cost to the importing country of a VER compare to either an import quota or free trade? *In comparison to the import quota* (which uses minimal resources to administer), the VER causes a loss of area  $c$ . This is the amount paid to the foreign exporters rather than kept within the importing country. We can also view it as a national loss due to a deterioration in the importing country’s terms of trade (the higher price paid to foreign exporters) because of the VER. *In comparison to free*

<sup>2</sup> I learned of an interesting variation on this effect from one of my students a number of years ago. I noticed that each time I saw him outside of class he was driving a different expensive car. I complimented him on this, and he said that his family in India was doing very well. When I asked what they did, he said that they owned some of the VER rights to export clothing from India to countries like the United States. He said that his family actually did not bother to make clothing; instead they simply rented the export rights to local clothing manufacturers. Thus, his family did very well by getting some of area  $c$  created by the clothing VERs.

## Case Study VERs on Textiles and Clothing

At about the same time that Godzilla first appeared, another monster began to arise out of the Pacific Ocean. In 1955 the U.S. government convinced the Japanese government to “voluntarily” limit Japan’s exports of cotton fabrics and clothing to the United States. (The film, titled *Gojira*, opened in Japan in 1954; retitled *Godzilla*, it was first shown in the United States in 1956.) In the late 1950s Britain followed by compelling India and Pakistan to impose VERs on their clothing and textile exports to Britain, and the monster then just grew. The VERs were initially justified as “temporary” restraints in response to protectionist pleas from import-competing firms that they needed time to adjust to the rising foreign competition.

The 1961 Short-Term Arrangement led to the 1962 Long-Term Arrangement. In 1974 the Multifibre Arrangement extended the scheme to include most types of textiles and clothing, and the trade policy monster became huge. Within this Arrangement or along side it, a large and rising number of VERs, negotiated country by country and product by product, limited exports by developing countries to industrialized countries (and to a number of other developing countries as well). This regime violated two key tenets of the General Agreement on Tariffs and Trade (now part of the World Trade Organization rules), because the VERs were quantitative limits (not tariffs) and because they were set bilaterally

(rather than applying to all other countries equally [“most favored nation”]).

The monster even had its own growth dynamic. A VER is, in effect, a cartel among the exporting firms. Like any cartel, success in getting a higher profit markup attracts other suppliers. Production of textiles and clothing for export spread to countries such as Bangladesh, Cambodia, Fiji, and Turkmenistan. As these countries became successful exporters, the importing countries pressured them to enact VERs to limit their disruption of the managed trade.

The developing countries that were constrained by these VERs pushed hard during the Uruguay Round of trade negotiations to bring this trade back within the normal rules. The Agreement on Textiles and Clothing came into force in 1995 and provided for a 10-year period during which all quotas in this sector would be ended. While some importing countries ended the VERs early (for instance, Norway in 2001), the United States, the European Union, and Canada took full advantage of the gradual phase-in, so that most of their liberalizations were back-loaded and did not occur until the very last day, January 1, 2005. On that day, after half a century of life, the monster seemed to die. (This is not free trade, because many countries continue to have relatively high import tariffs in this sector. But the web of VERs ended.)

The big winner from this liberalization will be consumers. The VERs generally increased

*trade*, the net loss to the importing country because of the VER is area  $b + c + d$ . The VER may be a politically attractive way of offering protection to an import-competing industry, but it is also economically expensive for the importing country. (In addition, note that *for the world as whole* the net loss in comparison to free trade is only area  $b + d$ . Area  $c$  is a transfer from consumers in the importing country to producers in the exporting country, so it is not a loss to the whole world.)

There is another important effect of the VER. For many products foreign producers can adjust the mix of varieties or models of the product that they export, while remaining within the overall quantitative limit. Usually, the profit margin on

prices by about 10–30 percent. Another set of big winners is likely to be the countries that have a strong comparative advantage in textiles and clothing, but whose production and exports were severely constrained by the VERs. Experts believe that China will be a big winner on the production side, with some expecting China to increase its share of world production from about 20 percent to perhaps 50 percent. India also seems poised for major growth. On the other side, the pressure from import competition will increase, and production and employment in textile and clothing industries will continue to decrease in the United States and many other industrialized countries. The other set of losers is likely to be the developing countries that do not have comparative advantage in textiles and clothing production, but that became producers and exporters of textiles and clothing because the VERs severely restricted the truly competitive countries. (This is another type of production inefficiency that resulted from the VERs.) These countries will lose the VER rents that they had been receiving, and their industries will also shrink as countries such as China and India expand.

In the series of Godzilla films, monsters that appear to die reappear later. As part of its accession agreement to the World Trade Organization, China accepted that other countries could impose China-specific “safeguards”

if its rising exports of textile or clothing products harmed import-competing producers. In 2002, as part of the gradual phase-in, the United States removed VERs in a number of product areas. For such products as bras, robes, and knitted fabrics, Chinese exports then increased by several hundred percent or more (although the actual increases are less dramatic than they sound, because the percentage growth rates are based on small, VER-constrained initial values). Following complaints by U.S. producers, the U.S. government in 2003 imposed safeguards to limit the quantities of Chinese export of these three products. Then in 2004 the U.S. government imposed safeguard limits on sock imports from China.

In mid-2005, following rapid growth of Chinese exports in the first part of the year (the time immediately after all remaining VERs were removed), the U.S. government enacted safeguard restraints on Chinese exports of pants, shirts, underwear, and combed cotton yarn. At about the same time the European Union imposed safeguard limits on Chinese exports of pants, pullovers, t-shirts, blouses, sweaters, dresses, bras, cotton fabrics, flax yarn, and bed, table, and kitchen linens. These safeguards are supposed to be temporary, but we’ve heard that before. Are they the last gasp of this monster of quotas limiting textile and clothing trade, or is the monster about to revive and begin to grow again?

higher-quality varieties is larger, so the exporters shift toward exporting these varieties (a process called “quality upgrading”). As the Japanese firms implemented the VER on their auto exports to the United States, one part of their strategy was to shift the mix of models exported, away from basic subcompact cars (like the Honda Civic) and toward larger, fancier models (like the Honda Accord and eventually the Acura line). (In this auto case, there was one more notable effect. To avoid the sales limits created by the VER, Japanese automobile firms set up assembly operations in the United States. More generally, any import protection can serve as an incentive for direct investment into the importing country by the thwarted foreign exporters. We examine foreign direct investment in Chapter 15.)

## Case Study Auto VER: Protection with Integrity?

Before the mid-1970s import totals of automobiles into the United States were minuscule. Then, in the late 1970s sales of Japanese-made automobiles accelerated in the United States. American buyers were looking for smaller cars in the wake of substantial increases in the price of oil. Japanese manufacturers offered good-quality smaller cars at attractive prices. Japanese cars were capturing a rapidly growing share of the U.S. auto market, U.S. production of cars was declining, American autoworkers were losing their jobs, and the U.S. auto companies were running low on profits.

In early 1981 the protectionist-pressure tachometer was in the red zone. Japanese auto exports were caught in the headlights, with Congress ready to impose strict import quotas if necessary. Ronald Reagan, the new U.S. president, had a problem. In March 1981, his cabinet was having a key discussion about auto quotas. Reagan's autobiography later explained his thinking at that moment:

As I listened to the debate, I wondered if there might be a way in which we could maintain the integrity of our position in favor of free trade while at the same time doing something to help Detroit and ease the plight of thousands of laid-off assembly workers.

The Japanese weren't playing fair in the trade game. But I knew what quotas might lead to: I didn't want to start an all-out trade war, so I asked if anyone had any suggestions for striking a balance between the two positions. [Then-Vice President] George Bush spoke up: "We're *all* for free enterprise, but would any of us find fault if Japan announced without any request from us that they were going to *voluntarily* reduce their exports of autos to America?"

I knew the Japanese read our newspapers and must know about the sentiment building up in Congress for quotas on their cars; I also knew there must be some apprehension in Tokyo that, once Congress imposed quotas on automobiles, there was a good possibility it might try to limit imports of other Japanese products.

I liked George's idea and told the cabinet I'd heard enough and would make a decision, but

didn't tell them what it was. After the meeting, I [arranged an extra meeting during the already-scheduled visit of Japanese Foreign Minister Masayoshi Ito to Washington] . . .

Foreign Minister Ito . . . was brought into the Oval Office for a brief meeting . . . I told him that our Republican administration firmly opposed import quotas but that strong sentiment was building in Congress among Democrats to impose them.

"I don't know whether I'll be able to stop them," I said, "But I think if you *voluntarily* set a limit on your automobile exports to the country, it would probably head off the bills pending in Congress and there wouldn't be any mandatory quotas."\*

The Japanese government got the message and "voluntarily" agreed to make sure that Japanese firms put the brakes on their exports to the United States. Maximum Japanese exports to the United States for each of the years 1981 through 1983 were set at a quantity of 1.8 million vehicles per year, about 8 percent less than what they had exported in 1980. As total automobile sales in the United States increased substantially after the 1981–1982 recession, the export limit was raised in 1984 to 2 million and in 1985 to 2.3 million. The export restraint continued to exist until 1994, but from 1987 on actual Japanese exports to the United States were less than the quota quantity. By 1987 Japanese firms were producing large numbers of cars in factories that they had recently built in the United States. (We examine this kind of foreign direct investment in Chapter 15.)

As a result of the VER, the profits of U.S. auto companies increased, as did production and employment in U.S. auto factories. What did the VER cost the United States? One recent careful study estimated that the VER cost U.S. consumers about \$13 billion in lost consumer surplus, and that it imposed a net loss to the United States of about \$3 billion. Other estimates of these costs are even higher. "Protection with integrity" does not come cheap.

\* Ronald Reagan (1990), pp. 253–55, as quoted in Low (1993), pp. 114–15. Emphasis in the original.

## OTHER NONTARIFF BARRIERS

In addition to quotas and VERs, there are many other kinds of nontariff import barriers. Indeed, we should be impressed with governments' creativity in coming up with new ways to discriminate against imports. Let's look more closely at three other NTBs from the vast toolkit used against imports. (The box "Carrots Are Fruit, Snails Are Fish, and X-Men Are Not Humans" provides more examples of creativity.)

### Product Standards

If you are looking for rich variety and imagination in import barriers, try the panoply of laws and regulations pertaining to product quality, including those enforced in the names of health, sanitation, safety, and the environment. Such standards can be noble efforts to enhance society's well-being, by addressing market failures that lead to unsafe conditions and environmental degradation.

Standards that accomplish these goals need not discriminate against imports. But, if a government is determined to protect local producers, it can always write rules that can be met more easily by local products than by imported products. For instance, the standards can be tailored to fit local products, but to require costly modifications to foreign products. Or, the standards can be higher for imported products or enforced more strictly. Or, the testing and certification procedures can be more costly, slower, or more uncertain for foreign products. Here are some examples to illustrate the ingenuity of the standard-setters.

In an obvious effort to protect domestic ranchers, the U.S. government in the past has found hidden health hazards in the way beef cattle are raised in Argentina. Similarly, the European Union (EU) has banned imports of beef from cattle that have received growth hormones, claiming that it is responding to public concerns about health dangers. The United States asserts that this is actually protection of European beef producers, because the scientific evidence indicates that beef from cattle that receive growth hormones is safe and poses no risk to human health.

The EU requires that foreign facilities producing dairy products and many other animal products be approved as meeting EU public health standards. But it has not devoted many resources to the approval process, leading to waits of months for simple approvals. Health regulations set by the Mexican government require inspection and approval of factories making herbal and nutritional products that are sold in Mexico. However, the Mexican authorities have been unable to inspect factories in other countries.

The U.S. government has complained that Japan's procedures for approving pharmaceuticals and medical devices is slow. For instance, the Japanese government often requires clinical trials on Japanese patients, even though such trials simply duplicate those completed successfully in other countries. The U.S. government also battled with the Japanese government over aluminum baseball bats! For several years around 1980, U.S.-made aluminum bats were refused certification as acceptable, even though the American bats were the basis for the Japanese safety standards. And, when the U.S. bats became eligible for certification, the Japanese government for several years insisted on inspecting each imported bat one by one, a time-consuming and costly process.

Product standards usually do not raise tariff or tax revenues for the importing country's government. On the contrary, enforcing these rules uses up government resources (and businesses must use resources to meet the standards). The standards can bring a

## Case Study Carrots Are Fruit, Snails Are Fish, and X-Men Are Not Humans

Governments have shown perhaps their greatest trade-policy creativity when deciding in what categories different imported goods belong. Their decisions are by no means academic. The stakes are high because an import that falls into one category can be allowed into the country duty-free, whereas the same import defined as falling into a related category is subject to a high tariff or banned altogether.

You can bet that if definitions matter so much to trade policy, there will be intense lobbying over each commodity's official definition. Protectionists will insist that an imported product be defined as belonging to the category with the high import barrier, but importing firms will demand that it be put in the duty-free category. When such strong pressures are brought on government, don't always expect logic in the official definitions.

Some of the resulting rules are bizarre. For example, here are two included in regulations passed by the European Union (EU) in 1994:

- Carrots are a fruit. This definition allows Portugal to sell its carrot jam throughout Western Europe without high duties.
- The land snail, famously served in French restaurants, is a fish. Therefore, European snail farmers can collect fish farm subsidies.

The United States has similarly bent the rules, modifying the definition of a car versus a passenger van versus a truck, to reflect different pressures in protectionist debates. In the early 1990s Carla Hills, then the U.S. trade representative, was compelled to call the same car both American and "not American." She told the Japanese government that car exports from U.S. factories owned by Japanese firms to Japan were Japanese, not American. They did not count when the U.S. government examined the size of American car exports to Japan. At the same time, she told

European governments that the cars exported to Europe from these same Japanese-owned factories in the United States were American, so they were not subject to European quotas on Japanese car imports.

With even greater ingenuity private firms have changed the look and the names of their products to try to get around each set of official definitions. For instance, a VER on down-filled ski parkas led to the innovation of two new products that were not subject to VERs. One product was a down-filled ski vest that had one side of a zipper on each armhole. The other product was a *matched pair of sleeves*, with one side of a zipper at the top of each sleeve. Once the two products were imported "separately," the distributor knew what to do.

In some cases it is a U.S. judge that makes the call. In 2001 a judge ruled that cheap children's Halloween costumes (think "Scream") were "fancy dress apparel," not the "flimsy festive articles" that the U.S. Customs Service had long considered them. The suit was a victory for the U.S. producer, Rubie's Costume Company, that brought it. Rather than entering duty-free, imported costumes (that competed with Rubie's) would be subject to a tariff up to 32 percent and be covered by the VERs on clothing. Trick or treat?

In 2003 another U.S. judge studied opposing legal briefs and more than 60 action figures, both heroes and villains. Among her conclusions were that the X-Men were not humans, nor were many of the others. She was not just playing around: Toys that depict humans are dolls, subject to 12 percent import tariffs, but toys that depict nonhumans are just toys, subject to a 7 percent tariff.

Such games have been played with great frequency over the definitions of products. As long as definitions mean money gained or lost, products will be defined in funny ways.

net gain in overall well-being to the extent that they truly protect health, safety, and the environment. Yet it is easy for governments to disguise costly protectionism in virtuous clothing.

### Domestic Content Requirements

A **domestic content requirement** mandates that a product produced and sold in a country must have a specified minimum amount of domestic production value, in the form of wages paid to local workers or materials and components produced within the country. Domestic content requirements can create import protection at two levels. They can be a barrier to imports of the products that do not meet the content rules. And they can limit the import of materials and components that otherwise would have been used in domestic production of the products. For instance, local content requirements for automobiles, used by Malaysia and other countries, force local auto manufacturers to use more domestically produced automobile components and parts (for instance, sheet metal or seat covers). If the domestic content requirement is set high enough, it can force domestic production of such expensive parts as engines or transmissions.

A closely related NTB, sometimes called a **mixing requirement**, stipulates that an importer or import distributor must buy a certain percentage of the product locally. For instance, the Philippines government requires that certain retail stores in the country must source at least 30 percent of their inventory in the Philippines. Such mixing requirements have also been used to restrict imports of foreign entertainment. Canada has often imposed “Canada time” requirements on radio and TV stations, forcing them to devote a certain share of their air time to songs and shows recorded in Canada. Similarly, as we will see in Chapter 12, the EU, led by France, has waged a sustained war against American entertainment, partly by stipulating that minimum percentages of various forms of entertainment must be from domestic studios.

Like product standards, domestic content and mixing requirements do not generate tariff or tax revenue for the government. The gains on the price markups are captured by the protected home-country sellers of the protected products. These requirements create the usual deadweight losses because the protected local products are less desired or more costly to produce.

### Government Procurement

Governments are major purchasers of goods and services. One estimate is that government purchases of products that could be traded internationally amounts to close to one-tenth of all product sales in the industrialized countries. Government procurement practices can be a nontariff barrier to imports, if the purchasing processes are biased against foreign products, as they often are. In many countries the governments buy relatively few imported products and instead buy mostly locally produced products.

In the United States, the Buy America Act of 1933 is the basic law that mandates that government-funded purchases favor domestic products. For different types of purchases the bias takes different forms, including prohibitions on buying imports, local content requirements, and mandating that domestic products be purchased unless imported products are priced much lower (for instance, at least one-third lower). More than half of the states and many cities and towns also have “Buy American” or “buy local” rules for purchases by their governments.

Many other countries have similar rules and practices. For instance, in Japan the U.S. government has complained that the Japanese government has limited foreign sales of telecommunications products and services to the government and government-owned companies by using both standards that are biased toward local products and short time periods for bidding. In Greece the specifications for the goods and services that the government plans to buy are often vague and tend to favor local suppliers. It also appears that the Greek government informally favors Greek and other EU firms when making purchasing decisions. Furthermore, in some countries (Italy is often cited as an example) the informal bias is reinforced by widespread corruption in the process of awarding government contracts.

## HOW BIG ARE THE COSTS OF PROTECTION?

We have examined the effects of tariffs and nontariff barriers to imports. How important are these effects? Are the costs large or small? Large or small relative to what? We'll look at their importance first for the whole national economy, and then for specific products that receive high levels of protection.

### As a Percentage of GDP

One popular way of weighing the importance of any economic cost or benefit is to see whether it is a big part of the national economy, which we usually measure by the value of domestic production (gross domestic product, or GDP). Surprisingly, our basic theory indicates that the costs of protection for a typical industrialized country are small, even if we ignore any favorable changes in the country's terms of trade (the small-country assumption).

Consider a diagram like Figure 8.4B. For a small country that imposes a tariff, area  $b + d$ , the net national loss from the tariff, equals one-half the tariff rate times the reduction in the import quantity. Using this equality and some mathematical manipulation, we can write the expression for the net national loss as a percentage of GDP:<sup>3</sup>

Footnote 3

$$\frac{\text{Net national loss from the tariff}}{GDP} = \frac{1}{2} \times \text{Tariff rate} \times \frac{\text{Percent reduction in import quantity}}{\text{Import value}} \times \frac{\text{Import value}}{GDP}$$

<sup>3</sup> Here is how we get this formula. Our analysis of tariffs in Chapter 8 indicates that the net national loss (a money amount) is the area of the triangle  $b + d$  (or the sum of the two triangles  $b$  and  $d$ ). Recalling that the area of a triangle is equal to one-half of the product of the base (the change in imports as the result of the tariff) and height (the tariff money amount per unit, which is equal to the percentage tariff rate times the import price):

$$\text{Net national loss from the tariff} = 1/2 \cdot (\text{Reduction of import quantity}) \cdot (\text{Tariff rate} \cdot \text{Import price})$$

Then, divide the first term in parentheses on the right side of the equation by the import quantity (so it becomes reduction in import quantity divided by import quantity, which is the percent reduction in import quantity, stated in decimal form) and multiply the second term by the import quantity (so we obtain import price times import quantity, which is import value, as part of the expression). We then have:

$$\text{Net national loss from the tariff} = 1/2 \cdot (\text{Percent reduction of import quantity}) \cdot (\text{Tariff rate} \cdot \text{Import value})$$

Now divide both sides of the equation by the money value of GDP, and rearrange terms to obtain the expression in the text.

A similar expression applies to a product affected by an import quota or some other nontariff barrier. (The percentage increase in domestic price that results from the NTB replaces the tariff rate.) Furthermore, we can use this expression to examine the effect of all tariffs and nontariff barriers imposed by the country. (Roughly, we get this expression if we add up all the losses for all products protected against imports.)

How large is the loss? Suppose, for example, that a nation's import tariffs are all 10 percent and that they cause a 20 percent reduction in import quantities. Suppose that total imports affected by these tariffs are 20 percent of GDP. In this realistic case, the net national loss from all tariffs on imports equals  $1/2 \times 0.10 \times 0.20 \times 0.20$ , or only 0.2 percent of GDP! The net national loss from import protection is not likely to be large, for a country that has rather low tariff levels and that is not that dependent on imports. The cost of protection is now relatively small for industrialized countries because the governments of these countries have cooperated to lower their trade barriers so much during the past half-century. (We also note that that 0.2 percent of U.S. GDP is about \$25 billion, an amount that most of us would not think to be absolutely small.)

However, we also know that estimates based on this simple calculation can underestimate the costs of protection as a share of GDP. Here are five ways in which the true cost is probably bigger than the calculation above shows:

- *Foreign retaliation.* If our country has introduced barriers, other governments may retaliate by putting new barriers against our exports. The true costs would be higher than any shown in the diagram or the calculation above. The costs would be much higher in the event of a trade war, in which each side counterretaliates with still higher import barriers.
- *Enforcement costs.* Any trade barrier has to be enforced by government officials. That is costly because the people enforcing the trade barrier could have been productively employed elsewhere. Part of the revenues collected by the government (area *c* in our diagram) are the waste of society's resources used to enforce the barrier. This is a loss to the country, not just a pure redistribution from consumers to the government.
- *Rent-seeking costs.* Local firms seeking protection may use techniques such as lobbying that also use resources. If this is the case, then part of the producer surplus created by protection (area *a* in our diagram) is also a loss due to wasted resources, rather than a pure redistribution from consumers to producers. In addition, firms and individuals may use resources to try to claim the tariff revenues or the price markup on the quota quantity of imports, another reason that some of area *c* could be a national loss due to wasted resources.
- *Rents to foreign producers.* VERs encourage foreign exporters to raise their export prices. This is a third reason that some or all of area *c* could be a loss to the importing country.
- *Innovation.* Protection can mute the incentive to innovate new technology, because there is less competitive pressure. In addition, protection can cause a loss to national well-being because it reduces the number of varieties of products available in the domestic market. (Recall the discussion in Chapter 5.)

For any or all of these reasons the cost of protection could be noticeably larger than the estimates from the simple calculations above, but it is not easy to say how much larger.

Furthermore, a subtle implication of the simple equation is that increasing existing barriers brings rapidly rising national costs. The percent reduction in imports equals the tariff rate, which is the percentage increase in import price, times the price elasticity of demand for imports (ignoring its negative sign). The net loss formula can be rewritten as follows:<sup>4</sup>

$$\frac{\text{Net national loss from the tariff}}{\text{GDP}} = \frac{1}{2} \times \text{Tariff rate} \times \left( \text{Tariff rate} \times \frac{\text{Price elasticity of import demand}}{\text{Price elasticity of import demand}} \right) \times \frac{\text{Import value}}{\text{GDP}}$$

The tariff rate (or the price markup from a quota) has a squared effect on the net national loss. This means that doubling today's tariffs (or NTBs) would quadruple their cost, and tripling them would increase their cost by nine times. There is still a lot at stake in debates about increasing barriers to imports.

### For Specific Products with High Protection

Almost all countries have some products that are highly protected—products that have high tariff rates, restrictive quotas, or other restrictive NTBs. The political reason for import barriers is often to enhance the incomes of a threatened domestic industry. These high barriers add large amounts of income to the protected industry. The high barriers also create costs that can be large. How much does it cost society for each dollar of protected income? If it cost the rest of society only \$1.03, it is not expensive to provide assistance to the threatened industry. If it costs \$2.00 for every dollar of income protected, that would strike most observers as expensive.

To get a quick idea of how much it might cost society to create a dollar of protected income, let's return to the calculation that led to our conclusion that import barriers cost only 0.2 percent of GDP. In this case, the tariffs gave domestic producers a 10 percent hike in the price of their products. If the threatened industries were 25 percent of GDP, then their gains in producer surplus, as a percentage of GDP, would be close to 10 percent times 25 percent, or 2.5 percent of GDP. Every dollar transferred to provide income for the protected industries also costs society an additional 8 cents (equal to 0.2 divided by 2.5) in deadweight losses. Thus, every dollar of protected income costs the rest of society \$1.08 (the \$1.00 transferred plus the extra loss of \$0.08), even in this example in which the level of protection is moderate.

For highly protected industries, the costs are often much larger than this. Figure 9.4 shows us the various losses and gains for 21 products that are highly protected in the United States. In this analysis, the United States is a large country, so the calculations are based on diagrams like Figures 8.5 and 9.3. The upper panel shows that billions of dollars are at stake for these highly protected industries.

Figure 9.4

In the lower panel, we see the costs to other groups of a dollar of protected income. For each dollar of protected producer income, consumers lose more than \$2 on average for the 21 cases. The United States as a whole loses \$0.66 for each

<sup>4</sup> The only difference between the previous equation in the text to this one is the middle expression on the right side of the new expression. The tariff rate is also the percentage change in import price, because it shows the percent by which the tariff-inclusive domestic price exceeds the world price. The price elasticity of import demand measures the percentage change in import quantity per 1 percent change in import price. Putting these together, we see that

$$\text{Percent reduction in import quantity} = \text{Tariff rate} \cdot \text{Price elasticity of import demand}$$

**FIGURE 9.4** Losses and Gains from U.S. Protection, Selected Products, 1990

	Protected U.S. Producers Gain (Area <i>a</i> ) <sup>a</sup>	U.S. Consumers Loss (Area <i>a + b + c + d</i> )	U.S. Terms-of- Trade Gain (Area <i>e</i> ) <sup>b</sup>	U.S. Deadweight Loss (Area <i>b + d</i> )	U.S. Net National Gain (Area <i>e - b + d</i> ) <sup>b</sup>	Foreign Deadweight Loss (Area <i>f</i> )	Net World Loss (Area <i>b + d + f</i> )
<b>In Millions of Dollars</b>							
Tariffs in 14 sectors <sup>c</sup>	679	1,956	465	70	395	32	102
Import quotas in 2 sectors <sup>d</sup>	1,791	2,564	72	600	-528	18	618
VERs and similar export quantity limits in 5 sectors <sup>e</sup>	12,312	25,857	-6,870	2,603	-9,473	711	3,314
All 21 sectors	14,782	30,375	-6,333	3,273	-9,739	761	4,034
<b>In Dollars per Dollar of Protected U.S. Producers' Gain</b>							
Tariffs in 14 sectors <sup>c</sup>		2.88	0.68	0.10	0.58	0.05	0.15
Import quotas in 2 sectors <sup>d</sup>		1.43	0.04	0.34	-0.29	0.01	0.35
VERs and similar export quantity limits in 5 sectors <sup>e</sup>		2.10	-0.56	0.21	-0.77	0.06	0.27
All 21 sectors		2.05	-0.43	0.22	-0.66	0.05	0.27

<sup>a</sup> Areas refers to areas indicated in Figures 8.5 and 9.3.

<sup>b</sup> For VERs and similar export quotas, area *c*, the markup lost, relative to free trade, is used in place of area *e*.

<sup>c</sup> The 14 tariff-protected sectors are ball bearings, benzenoid chemicals, canned tuna, ceramic articles, ceramic tiles, costume jewelry, frozen concentrated orange juice, glassware, luggage, polyethylene resins, rubber footwear, softwood lumber, women's nonathletic footwear, and women's handbags.

<sup>d</sup> The 2 sectors protected by import quotas are dairy products and coastal shipping.

<sup>e</sup> Of the 5 sectors protected by VERs and similar export quantity limits, apparel, textiles, and machine tools were protected by VERs, and peanuts and sugar were protected by export quotas assigned to foreign countries by the U.S. government.

Source: Hufbauer and Elliott (1994).

dollar of protected income. That is, other Americans lose \$1.66 for each \$1.00 gained by the protected U.S. industries. This is a rather large cost to other Americans, to protect incomes in these industries.

The world as a whole loses \$0.27 for each dollar of protected U.S. producer income. Per dollar of protected income, this is \$0.22 of deadweight losses in the United States plus \$0.05 of deadweight losses to foreigners based on their loss of exports to the United States.

As we would expect from our analyses presented in Chapter 8 and earlier in this chapter, there is an interesting contrast between industries protected by tariffs or quotas and those protected by VERs. For tariffs and quotas, the United States, as a large country, experiences gains from terms of trade improvements. Foreign producers cut their export prices when U.S. demand decreases due to the tariff or quota. In fact, the tariffs actually bring net gains to the United States, because the terms of trade gains are larger than the deadweight losses. For VERs, the United States experiences losses from terms-of-trade declines. Foreign producers increase their export prices when told to limit their exports.

Messlerlin (2001) uses a similar method to generate estimates for highly protected sectors in the European Union. He finds, for instance, that it costs EU consumers about \$4 per dollar of protected EU producers' gain. Per dollar of income maintained in highly protected industries, protection in the EU is noticeably more costly than it is in the United States.

## WTO: TARIFF SUCCESS AND NEW CHALLENGES

During the past 60 years, governments of the industrialized countries reached a series of global agreements that have largely reduced their tariff rates on industrial goods to low levels. Import quotas on these goods have also mostly ceased as well. However, as we saw in this chapter, national governments have sometimes substituted other nontariff barriers to imports for the tariffs and quotas that are disappearing. It has proved more difficult to find global agreements that limit these other nontariff barriers. In addition, national governments only recently began to take up the challenges of freeing international trade in agricultural products and in services.

Since 1995, the **World Trade Organization (WTO)** has overseen the global rules of government policy toward international trade and provided the forum for negotiating global agreements to improve these rules. The WTO subsumed and expanded on the **General Agreement on Tariffs and Trade (GATT)**, a "provisional agreement" signed by 23 countries in 1947. The WTO (like the GATT before it) espouses three major principles: (1) liberalization of trade; (2) nondiscrimination, or the most-favored nation (MFN) principle; and (3) no unfair encouragement for exports.

As of mid-2005, the WTO had 148 member countries. In addition, nearly 30 countries, including Russia and Saudi Arabia, have been negotiating to become members. (The box "China Joins the WTO" indicates what a country must do to become a WTO member.) The WTO's headquarters is in Geneva, Switzerland.

### Multilateral Trade Negotiations

Under the GATT, member countries pursued eight rounds of negotiations to lower governmental barriers to trade: Geneva 1947, Annecy 1949, Torquay 1950–1951,

Geneva 1956, Dillon 1960–1962, Kennedy 1964–1967, Tokyo 1973–1979, and Uruguay 1986–1993. These multilateral trade negotiations have been very successful in reducing tariffs.

It hasn't been easy. From the start, the agreements had to excuse some of the least reformable sectors to focus on sectors where agreements were possible. Agricultural protection and subsidies received little attention until the Uruguay Round. Developing countries usually were under less pressure to liberalize, though a number have unilaterally liberalized their trade in the past 30 years. Still, for nonagricultural products the average tariffs of industrialized countries have fallen from about 40 percent in the 1940s to about 3 percent. Part of the credit for this liberalization goes to the negotiating procedures set up under the GATT. Each nation's government is able to defend its tariff-cutting "concessions" against the protests of domestic protectionists as the price the country must pay to give its exporters better access to other markets. This mercantilist logic is bad economics—we know that imports are something the country gains and exports are something the country gives up—but it seems to be useful politics.

The negotiations have had less success, however, in attacking nontariff barriers. The protective effects of nontariff barriers are harder to measure than those of a tariff. As a result, it is harder to get international agreement on what constitutes an exchange of "comparable" NTB reductions. Perhaps because these barriers are harder to measure and compare, protectionism has increasingly used NTBs since the early 1970s.

The Tokyo Round was the first to take up the issue of NTBs. Agreements were reached on technical standards, government procurement, import licensing procedures, and customs valuation. The agreements have had only modest effects.

The Uruguay Round was the most comprehensive multilateral trade negotiation ever (and, not unrelated, also the longest ever). In addition to lowering tariff rates on industrial products and establishing the WTO, national governments agreed to phase out the global web of VERs on textiles and clothing by 2005, and to end the use of most other VERs. National governments also agreed to reduce their use of domestic content requirements. It will be harder for a national government to require that firms in a country can sell only those products that have most of their value produced by people in the country.

The Uruguay Round agreement covers three areas that had received almost no attention in previous rounds. First, the treatment of agricultural goods was shifted to be similar to that of industrial goods. Tariffs (and tariff-rate quotas) have replaced many agricultural import quotas and other NTBs. The new tariffs were usually set high enough that there is no increase in trade. The gain is indirect: Tariffs may prove easier to liberalize in future international negotiations. In addition, governments agreed to reduce their domestic subsidies to agricultural production, their export subsidies for agricultural products, and the volume of exported products that receive these subsidies.

Second, the agreement created global rules requiring protection of intellectual property (patents, copyrights, and trademarks). It attacks the practice in many countries of copying ("pirating") innovating firms' products without getting, and paying for, a license to use these innovations.

Third, the Uruguay Round established a new set of rules, the General Agreement on Trade in Services. Many countries block international trade in services with outright

## Focus on China China joins the WTO

After 15 years of negotiations, China became a member of the WTO in late 2001. To become a member, China had to obtain acceptance from all WTO members. Negotiations between China and several other countries, including the United States and the European Union, were complex and sometimes difficult.

Here are some of the major commitments that the Chinese government made to gain membership in the WTO:

- *Tariff reductions:* For industrial products, the average tariff will fall from 25 percent to 9 percent (with dramatic reductions for some products—for instance, the tariff on auto imports will fall from 80–100 percent to 25 percent).
- *Services:* Limits on foreign direct investment in banking, financial securities, fund management, insurance, law, and telecommunication services will be liberalized.
- *Transport and product distribution:* Limits on foreign firms performing transport and distribution services will be removed.
- *Agriculture:* The average tariff will fall from 32 percent to 15 percent, no export subsidies will be granted, and domestic subsidies will be limited.

These liberalizations are being phased in during various time periods up to 2007.

These are big commitments—in some ways they go well beyond what members who joined the WTO years ago have agreed to. Making these changes is likely to be very disruptive within the

Chinese economy, although there is some foreign concern that the Chinese government (or the prefectural and local governments in China) will find subtle barriers to minimize the liberalizations. Why would China make these commitments?

One part of the answer is that China gets the general gains from freer trade (although it also incurs some transition costs from the disruptions). A World Bank project concluded that liberalizations undertaken in the run-up (1995–2001) to WTO membership and in implementing the WTO commitments will increase China's well-being by about \$50 billion per year, an amount equal to about 2 percent of China's gross domestic product.

A second part of the answer is that China gains the general benefits of WTO membership, including MFN treatment, access to the dispute settlement procedures, and participation in multilateral trade negotiations. Of special importance to China, the quotas that limited China's exports of textiles and apparel had to end by 2005 (as discussed in the box earlier in this chapter).

Another part of the answer is domestic politics in China. Reformers within the Chinese government leadership can use the WTO commitments to solidify and expand economic reforms. The reformers want to attract more foreign direct investment and pursue the long-run economic gains of better resource allocation.

A final note: Shortly after China joined, Taiwan also joined the WTO, not as a separate country, but as a separate customs area (the same status that Hong Kong and Macao have as separate members of the WTO). China had blocked the membership of Taiwan until after China joined.

bans on foreign suppliers and with legal red tape. The agreement contains little in the way of liberalization. As with agricultural products, it instead provides a framework for future negotiations to liberalize services trade. Indeed, in 1997, 69 countries agreed to open up national markets for basic telecommunications services. Also in 1997, 70 countries agreed to remove restrictions in banking, securities, and insurance.

The ninth round of multilateral trade negotiations began in late 2001. It was tough getting to this start, with a miss in Seattle in 1999 amid intense antiglobalization protests and stubborn disagreements among delegates from different countries about

what should be negotiated in the new round. The Doha Round has an agenda that is almost as ambitious as that of the Uruguay Round. It is expected to take years to complete. For more information on this new round, see the box “Rocky Road: The Doha Round.”

### Dispute Settlement

Among other improvements, the WTO has a much stronger dispute settlement procedure than the GATT had. If the government of a member country believes that another member country government is violating a commitment or WTO rule, it can file a complaint. The goal of the WTO is then to find a resolution to the dispute, including removing any violation that exists. The first step is consultations between the governments. If discussions cannot resolve the dispute, a panel of experts examines the case and reaches a decision. A country can appeal the decision by this panel, but it cannot block it just by objecting. If the complaint is upheld, the offending country is instructed to correct its policy. In most cases, the countries find a mutually acceptable solution to the dispute. But, if the offending country does correct its policy or provide other compensation, then as a last resort the WTO can authorize retaliation by the complaining country against the offending country.

Since its inception in 1995, the WTO has received a little over 30 complaints per year. In almost half of these, the United States or the European Union has been the complaining country; in almost half the United States or the European Union has been the alleged violator (the respondent); and often it is one complaining about the other. The dispute settlement procedure has also been widely used by other countries, though not so intensively. In about a third of the cases, a developing country has brought the complaint, and in about a third of the cases, a developing country is the alleged violator.

WTO authorization of retaliation is rare, and actual imposition of trade sanctions against a recalcitrant violating country even rarer. The sanctions are usually in the form of high tariffs against a set of products exported by the violating country. The *threat* of retaliation appears to be useful in getting violating countries to correct their policies, but *actual* retaliation is problematic. It runs counter to the WTO's goal of trade liberalization, and it is likely to reduce the well-being of both countries involved and of the world as a whole. It is fortunate that such retaliation has been rare.

## AMERICA'S "SECTION 301": UNILATERAL PRESSURE

The U.S. government has not been content to pursue better access to foreign market for U.S. exports only through the WTO. **Section 301** of the Trade Act of 1974 gives the president the power to negotiate to eliminate “unfair trade practices” of foreign governments that limit imports from the United States or other countries. As part of the process, the U.S. government threatens to enact new barriers to imports from the allegedly offending country if it does not change its policies. (U.S. law also has “Special 301,” which mandates an annual report on countries that do not provide adequate protection to intellectual property.)

## Case Study The Rocky Road to Doha

In the late 1990s discussions began about a new round of multilateral trade negotiations. A major effort to launch occurred at the WTO ministerial conference in Seattle in late 1999, but it was not to be. Two problems prevented the start, one outside the meeting place and the other within.

Outside the meeting place a huge antiglobalization protest swirled, sometimes violently. An unusual coalition of groups came together for the protest—environmentalists, human-rights activists, consumer advocates, organized labor (unions), anti-immigration groups, animal-rights activists, and anarchists. With such disparate groups involved, it is not easy to summarize their positions. Prominent complaints and demands, some of them contradictory with others, included:

- That the WTO is too powerful, that it usurps the sovereignty of national governments, and that it is undemocratic and secretive.
- That the WTO should expand the use of its substantial powers to achieve goals other than free trade, especially such goals as strict global environmental protection and better wages and working conditions in developing countries. (See Chapter 1 for discussion of the controversies about labor standards.)
- That the WTO is the tool of big business, and that freer trade benefits corporations and capitalists while hurting the global environment, local cultures, and workers in all countries.

The protests also disrupted and delayed the beginning of the conference.

Inside the meeting place the delegates could not find common ground on the agenda that would be addressed in the new round of negotiations. The agenda is important because it foreshadows the actual results that will be achieved in the round. The United States favored a narrow agenda, and the European Union a broad one. In addition, the developing countries were intent on having a major role in molding the agenda to fit their interests. Decisions in the WTO are based on a consensus among the national government members. Because the national ministers could not agree on an agenda, the effort failed.

After a hiatus the drive toward a new round gained speed in 2001. The effort to find consensus

on an agenda resumed in November 2001 at the ministerial meeting in Doha, Qatar, a location apparently chosen because it was essentially inaccessible to protesters. After much wrangling and after the meeting was extended, the ministers finally agreed on the agenda for the ninth round of multilateral trade negotiations. Each of the three major groups (the United States, the European Union, and the developing countries, led by India), compromised to reach the consensus.

Key elements of the agreed and decidedly ambitious agenda included substantial liberalization of agricultural trade, reducing tariffs on nonagricultural goods, liberalization of trade in services, improving the rules that allow antidumping and antisubsidy actions, clarifying the relationship between WTO rules and multilateral environmental agreements, liberalizing government procurement practices and customs procedures that impede trade, improving the dispute settlement procedure, and assuring access of developing countries to low-cost medicines to protect public health. There was also agreement to start negotiations separately in 2007, in two new areas—government policies toward foreign direct investment and principles for the use of competition policy (usually called antitrust policy in the United States). (Antidumping and antisubsidy rules are discussed at length in Chapter 11 of this book, trade and the environment in Chapter 13, and foreign direct investment in Chapter 15.)

However, in the next nearly two years little progress was made in the negotiations. Then in mid-2003 there was one small step forward one large jump backward. In August 2003 member countries reached agreement to revise the rules on intellectual property, to allow developing countries to import cheap generic versions of patented drugs in health emergencies (for example, to treat people with AIDS). That item was removed from the agenda through early resolution.

Then came the WTO ministerial meeting in Cancun, Mexico, in September 2003. With protesters once again demonstrating outside the meeting place, negotiations about moving the agenda forward collapsed and the meeting ended early. The United States and the European Union had put forward a proposal on agricultural

liberalization that was timid and fell short of what had been agreed at Doha. A group of developing countries led by Brazil was so angered by what they viewed as backsliding that they refused to discuss other issues. At the same time, the European Union pushed to have both foreign direct investment and competition policy moved up into the regular agenda of the round. The meeting ended in acrimony.

Recovery from this low point began in early 2004, led by the concerted efforts of Australia, Brazil, the European Union, India, and the United States. In July a renewed agreement on the agenda of the talks was announced. In the most important area, agriculture, it was agreed that the three key objectives are:

- elimination of all export subsidies by a date to be agreed (with delayed implementation permitted for developing countries).
- substantial reduction of trade-distorting domestic production subsidies.
- improved market access for foreign exporters, by reducing tariffs and expanding tariff-rate quotas.

These are essentially the same objectives announced in Doha, so the progress is largely a return to the initial agreement. The difference seems to be that the European Union and the United States are now more committed to them. The other important aspects of this 2004 agreement are the removal of government procurement from the agenda and the affirmation that foreign direct investment and competition policy are not part of the round.

Negotiations in the agreed areas of the round continue, but as of mid-2005 it still appears that there has been little progress. Yet, a package of agreements as envisioned in the round's agenda could bring major benefits. The World Bank estimates that Doha Round agreements (outside of services) could boost world well-being by \$300–500 billion per year, with over half of that accruing to developing countries. The benefits of liberalizing trade in services are potentially even larger.

The road to getting to the beginning of the Doha Round was certainly rocky, and the road through the round continues to be slow going. It will probably take years for its completion.



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What are the effects of unilateral actions by the U.S. government to open foreign markets with a threat of retaliation? That depends on whether the threatened country gives in and removes the practices that the United States says are unfair. If it does, then the U.S. government achieves some of its objectives, and it probably is a move toward at least somewhat freer international trade. However, if it does not, and the U.S. government imposes trade sanctions (usually in the form of high tariffs on an arbitrary set of products imported from the other country), then we have the same problem that we had with the use of retaliation in WTO trade disputes.

There is a real danger that using Section 301 will backfire in this way. Of the 100 or so Section 301 cases since 1974, nearly a quarter of them ended in retaliation by the U.S. government. Still, in about half of the cases the United States succeeded at least partially in achieving its objectives (improved market access, reduced foreign subsidies, or improved protection of intellectual property). Even for the successes, however, increases in U.S. exports usually were small (with the exception of large increases in U.S. exports of cigarettes, beef, and semiconductors to Japan, following negotiated resolutions of Section 301 complaints).

Not surprisingly, other countries resent U.S. government use of this law. They have been irked by the self-righteous tone with which the United States has written and used 301. They detect protectionist hypocrisy by the Americans. They also rightly point out that 301 allows the United States to conduct its own unilateral “trade crimes” trials, deciding by itself what is “unfair.”

There has been a drop-off in Section 301 cases since the early 1990s. The WTO has a binding dispute settlement process, a major improvement over the weak process available under the GATT. U.S. complaints are now much more likely to be sent to and resolved using the WTO. For instance, Kodak’s complaint about barriers protecting the Japanese film market began as a Section 301 case in 1995. Kodak complained that its low share in the Japanese market (about 10 percent) was due to Japanese government support of Fuji’s domination of distribution channels in Japan. In 1996, the U.S. government shifted the complaint to the WTO dispute settlement process. In 1998, the WTO ruled against the complaint, citing insufficient evidence of unacceptable protectionist actions by the Japanese government. In this case the decision was against the U.S. complaint, but most WTO rulings on other U.S. complaints have been in favor of the United States. The United States is likely to continue to rely mostly on the WTO dispute settlement process rather than using Section 301. In addition, the establishment of the WTO also limits the U.S. ability to retaliate unilaterally using Section 301. Foreign countries can complain about the retaliation using the WTO dispute settlement process. It would be very difficult for the U.S. government to defend its unilateral action in front of a decidedly multilateral organization.

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## Summary

**Nontariff barriers (NTBs)** reduce imports by limiting quantities, increasing costs, or creating uncertainties. Government officials in a country have many reasons for imposing NTBs, but economic efficiency apparently is not a valid reason for this choice. The basic analysis of the main nontariff barrier to trade, an **import quota**, indicates that it is at least as bad as a tariff. It is more costly than the tariff if it creates domestic monopoly power or if resources are used up in the private pursuit of licenses to import items legally.

A form of protection that became important in the 1980s, especially in the United States and the EU, is the **voluntary export restraint (VER)** arrangement. Here the importing country threatens foreign exporters with stiff barriers if they do not agree to restrict exports by themselves. Under a negotiated VER arrangement, the main foreign exporters form a cartel among themselves, agreeing to cut export quantities. At the same time, they are allowed to charge the full markup on their limited sales to the importing country, where the product has become more expensive. A curious result is that the importing country, which insisted on the VER in the first place, loses even more than if it had collected a tariff or quota markup itself.

Other important nontariff barriers include **domestic content requirements, mixing requirements**, government procurement favoring domestic products, and a host of quality and safety standards that have protectionist effects.

The net costs of import barriers, both tariff and nontariff, look small from some perspectives but large from others. They look small as a share of GDP when calculated in terms of the ordinary deadweight loss triangles. Yet this analysis overlooks foreign retaliation, enforcement costs, rent-seeking, and other considerations that can make import barriers more expensive. In relation to the protection provided to incomes in protected sectors, the net costs of import barriers are often rather large.

In 1995, the **World Trade Organization (WTO)** was born as the forum for global rules toward international trade. Member countries of the WTO, and the **General Agreement on Tariffs and Trade (GATT)** before it, conduct multilateral trade negotiations to lower trade barriers. Quotas on industrial products have largely been eliminated, and tariffs have been gradually reduced to low levels through the negotiated agreements, but the use of other NTBs has been rising. The Tokyo Round and the Uruguay Round included some efforts to reduce the use of NTBs. The new Doha Round will continue the global negotiations to liberalize tariff and nontariff barriers.

Under **Section 301** of the U.S. trade law, the U.S. government can unilaterally use the threat of imposing new import barriers, in an effort to force foreign-country governments to remove allegedly unfair policies that limit the access of U.S. exports to these countries. With the advent of the much-improved dispute settlement procedure in the WTO, the U.S. has reduced its use of Section 301.

### Key Terms

Nontariff barrier (NTB), 00	Voluntary export restraint (VER), 00	General Agreement on Tariffs and Trade (GATT), 00
Import quota (or just quota), 00	Domestic content requirement, 00	Section 301, 00
Fixed favoritism, 00	Mixing requirement, 00	
Import-license auction, 00	World Trade Organization (WTO), 00	
Resource-using application procedures, 00		

### Suggested Reading

Deardorff and Stern (1998) provide a broad survey of nontariff barriers to imports. Trionfetti (2000) examines government procurement as an NTB. Berry, Levinsohn, and Pakes (1999) provide a technical analysis of the VER on Japanese auto exports to the United States. Findlay and Warren (2000) present evidence on barriers to trade in

services, and Hoekman (2000) looks at gains from liberalizing services trade. Footer and Graber (2000) examine barriers to trade in cultural goods and services (films, music recordings, and so forth).

The costs of U.S. protectionism are quantified by Hufbauer and Elliott (1994). Messerlin (2001) reports the costs of protectionism for the European Union. Hufbauer (1996) provides a survey of similar studies for other countries. Feenstra (1995) provides a technical survey of work estimating the effects of protection. Anderson and Wincoop (2004) provide a survey of the magnitudes of a broad range of policies and other influences that seem to impede international trade.

Destler (2005) and Pearson (2004) survey the development of U.S. trade policy. Hoekman and Kostecki (2001) examine the WTO's rules and activities. Jones (2004) explores the controversies surrounding the WTO and its activities. Bagwell and Staiger (2002) provide a conceptual analysis of why the WTO and its rules make economic sense. Bhattasali et al. (2004) analyze China's accession to WTO membership. Using the gravity model described in the box in Chapter 6, Rose (2004) concludes that the WTO has not increased international trade, but Engelbrecht and Pearce (2004) and Subramanian and Wei (2003) counter with evidence that it has.

Bayard and Elliott (1994) provide an in-depth analysis of Section 301, and Elliott and Richardson (1997) update some of this analysis. Kherallah and Beghin (1998) examine the outcomes of Section 301 cases.

## Questions and Problems

- ◆ 1. What are import quotas? Why do some governments use them instead of just using tariffs to restrict imports by the same amounts? Is it because quotas bring a bigger national gain than tariffs?
2. What are voluntary export restraint (VER) agreements? Why do some governments force foreign exporters into them instead of just using quotas or tariffs to restrict imports by the same amounts? Is it because VERs bring the importing country a bigger national gain than quotas or tariffs?
- ◆ 3. Under what conditions could an import quota and a tariff have exactly the same effect on price, and bring the same gains and losses (given a tariff level that restricts imports just as much as the quota would)?
4. Define each of the following import policies, and describe its likely effects on the well-being of the importing country as a whole: (a) product standards and (b) domestic content requirements.
- ◆ 5. To protect Kodak jobs, the United States might decide to cut its imports of photographic film by 60 percent. It could do so by either (a) imposing a tariff high enough to cut film imports by 60 percent or (b) persuading Fuji and other foreign filmmakers to set up a VER arrangement to cut their exports of film to the United States by 60 percent. Which of these two policies would be less damaging to the United States? Which would be less damaging to the world as a whole? Explain.
6. The United States is considering adopting a regulation that foreign apples can be imported only if they are grown and harvested using the same techniques that are used in the United States. These methods are used in the United States to meet various government standards about worker safety and product quality.

- a. As a representative of the U.S. government, you are asked to defend the new import regulation before the WTO. What will you say?
- b. As a representative of foreign apple growers, you are asked to present the case that this regulation is an unfair restriction on trade. What will you say?
- ◆ 7. A small country imports sugar. With free trade at the world price of \$0.10 per pound, the country's national market is:

Domestic production	120 million pounds per year
Domestic consumption	420 million pounds per year
Imports	320 million pounds per year

The country's government now decides to impose a quota that limits sugar imports to 240 million pounds per year. With the import quota in effect, the domestic price rises to \$0.12 per pound, and domestic production increases to 160 million pounds per year. The government auctions the rights to import the 240 million pounds.

- a. Calculate how much domestic producers gain or lose from the quota.
- b. Calculate how much domestic consumers gain or lose from the quota.
- c. Calculate how much the government receives in payment when it auctions the quota rights to import.
- d. Calculate the net national gain or loss from the quota. Explain the economic reason(s) for this net gain or loss.
8. A small country's protectionism can be summarized: The typical tariff rate is 50 percent, the (absolute value of the) price elasticity of demand for imports is 1, imports would be 20 percent of the country's GDP with free trade, and the protected industries represent 15 percent of GDP. Using our triangle analysis, what is the approximate magnitude of the economic costs of the tariff protection, as a percentage of the country's GDP? As a percentage of the gain of producer surplus in the protected sectors?
- ◆ 9. For a small country, consider a quota and an equivalent tariff that permit the same initial level of imports. The market is competitive, and the government uses fixed favoritism to allocate the quota permits, with no resources expended in the process. There is now an increase in domestic demand (the domestic demand curve  $D_d$  shifts to the right). If the tariff rate is unchanged, and if the quota quantity is unchanged, are the two still equivalent? Show this using a graph. Be sure to discuss the effects on domestic price, production quantity, and consumption quantity, on import quantity, and on producer surplus, consumer surplus, deadweight losses, and government revenue or its equivalent for the quota.
10. A Japanese friend asks you to explain and defend American use of Section 301. What will you say?
- ◆ 11. Suppose that the U.S. government is under heavy pressure from the Rollerblade and K2 companies to put the brakes on imports of Bauer in-line skates from Canada. The protectionists demand that the price of a \$200 pair of in-line skates must be raised to \$250 if their incomes are to be safe. The U.S. government has

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three choices: (1) free trade with no protection, (2) a special tariff on in-line skates backed by vague claims that Canada is using unfair trade practices (citing Section 301 of the Trade Act of 1974), and (3) forcing Bauer to agree to a voluntary export restraint. The three choices would lead to these prices and annual quantities:

	With Free Trade	With an \$80 Tariff	With a VER
Domestic U.S. price per pair	\$200	\$250	\$250
World price per pair	\$200	\$170	\$170
Imports of in-line skates (millions of pairs)	10	6	6

Note that the \$80 tariff restricts imports by 4 million pairs a year, the same restriction that the VER arrangement would enforce.

- Calculate the U.S. net national gains or losses from the tariff, and the U.S. gains or losses from the VER, relative to free trade. Which of the three choices looks best for the United States as a whole? Which looks worst?
- Calculate the net national gains or losses for Canada, the exporting country, from the tariff and the VER. Which of the three U.S. choices harms Canada most? Which harms Canada least?
- Which of the three choices is best for the world as a whole?