chapter

9

Nontariff Trade Barriers and the New Protectionism

LEARNING GOALS:

After reading this chapter, you should be able to:

- Know the meaning and effect of quotas and other nontariff trade barriers
- Describe the effect of dumping and export subsidies
- Explain the political economy of protectionism and strategic and industrial policies
- Describe the effect of the Uruguay Round and the aims of the Doha Round

9.1 Introduction

Although tariffs have historically been the most important form of trade restriction, there are many other types of trade barriers, such as import quotas, voluntary export restraints, and antidumping actions. As tariffs were negotiated down during the postwar period, the importance of nontariff trade barriers was greatly increased.

In this chapter, we analyze the effect of nontariff trade barriers. Section 9.2 examines the effects of an import quota and compares them to those of an import tariff. Section 9.3 deals with other nontariff trade barriers and includes a discussion of voluntary export restraints and other regulations, as well as trade barriers resulting from international cartels, dumping, and export subsidies. In Section 9.4, the various arguments for protection are presented, from the clearly fallacious ones to those that seem to make some economic sense. Section 9.5 examines strategic trade and industrial policies. Section 9.6 briefly surveys the history of U.S. commercial or trade policy from 1934 to the present. Finally, Section 9.7 summarizes the outcome of the Uruguay Round of trade negotiations, discusses the launching of the Doha Round, and identifies the outstanding trade problems facing the world today. The appendix analyzes graphically the operation of centralized cartels, international price discrimination, and the use of taxes and subsidies instead of tariffs to correct domestic distortions.

9.2 Import Quotas

A quota is the most important nontariff trade barrier. It is a *direct* quantitative restriction on the amount of a commodity allowed to be imported or exported. In this section, we examine import quotas. Export quotas (in the form of voluntary export restraints) are examined in Section 9.3A. An import quota is examined in this section with the same type of partial equilibrium analysis used in Section 8.2 to analyze the effects of an import tariff. The similarities between an import quota and an equivalent import tariff are also noted.

9.2A Effects of an Import Quota

Import quotas can be used to protect a domestic industry, to protect domestic agriculture, and/or for balance-of-payments reasons. Import quotas were very common in Western Europe immediately after World War II. Since then import quotas have been used by practically all industrial nations to protect their agriculture and by developing nations to stimulate import substitution of manufactured products and for balance-of-payments reasons.

The partial equilibrium effects of an import quota can be illustrated with Figure 9.1, which is almost identical to Figure 8.1. In Figure 9.1, D_X is the demand curve and S_X is the supply curve of commodity X for the nation. With free trade at the world price of $P_X = \$1$, the nation consumes 70X *(AB)*, of which 10X *(AC)* is produced domestically and the

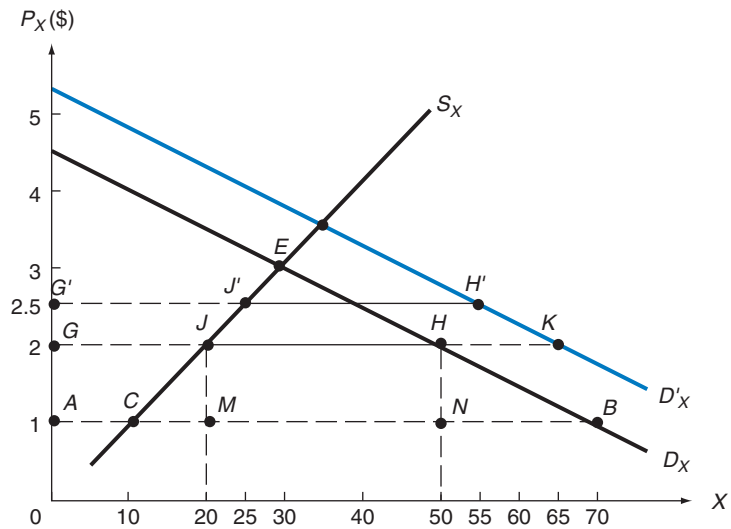

FIGURE 9.1. Partial Equilibrium Effects of an Import Quota.
D_X and S_X represent the nation's demand and supply curves of commodity X. Starting from the free trade $P_X = \$1$, an import quota of 30X *(JH)* would result in $P_X = \$2$ and consumption of 50X *(GH)*, of which 20X *(GJ)* is produced domestically. If the government auctioned off import licenses to the highest bidder in a competitive market, the revenue effect would also be \$30 *(JHNM)*, as with a 100 percent import tariff. With a shift in D_X to D'_X and an import quota of 30X ($J'H'$), consumption would rise from 50X to 55X ($G'H'$), of which 25X ($G'J'$) are produced domestically.

remainder of 60X *(CB)* is imported. An import quota of 30X *(JH)* would raise the domestic price of X to $P_X = \$2$, exactly as with a 100 percent ad valorem import tariff on commodity X (see Figure 8.1). The reason is that only at $P_X = \$2$ does the quantity demanded of 50X *(GH)* equal the 20X *(GJ)* produced domestically plus the 30X *(JH)* allowed by the import quota. Thus, consumption is reduced by 20X *(BN)* and domestic production is increased by 10X *(CM)* with an import quota of 30X *(JH)*, exactly as with the 100 percent import tariff (see Case Study 9-1). If the government also auctioned off import licenses to the highest bidder in a competitive market, the revenue effect would be \$30 (\$1 on each of the 30X of the import quota), given by area *JHNM*. Then the import quota of 30X would be equivalent in every respect to an "implicit" 100 percent import tariff.

With an upward shift of D_X to D'_X, the *given import quota* of 30X ($J'H'$) would result in the domestic price of X rising to $P_X = \$2.50$, domestic production rising to 25X ($G'J'$), and domestic consumption rising from 50X to 55X ($G'H'$). On the other hand, with the given 100 percent import tariff (in the face of the shift from D_X to D'_X), the price of X would remain unchanged at $P_X = \$2$ and so would domestic production at 20X *(GJ)*, but domestic consumption would rise to 65X *(GK)* and imports to 45X *(JK)*.

CASE STUDY 9-1 The Economic Effects of the U.S. Quota on Sugar Imports

The United States restricted sugar imports into the United States with a quota of 1.4 million tons per year in 2005. The quota more than doubled the price of sugar to U.S. consumers and led to a loss of consumer surplus of about \$1.7 billion per year (measured by the sum of areas $a + b + c + d$, as indicated in Figure 8.3). Of that amount, \$0.9 billion accrued to U.S. sugar producers in the form of producer surplus (area a in Figure 8.3), \$0.4 billion went to foreign sugar exporters to the United States in the form of the higher price that they received (area c in Figure 8.3), and \$0.4 billion represented the deadweight loss from the production and consumption distortions in the United States as a result of the quota (the sum of areas $b + d$ in Figure 8.3). Thus, the net total loss to the United States as a result of its sugar quota was about \$0.8 billion (the \$1.7 billion loss of consumer surplus minus the gain in producer surplus of \$0.9 billion).

Dividing the total loss of consumer surplus of \$1.7 billion by the 300 million people living in the United States in 2005, meant that on average every American spends about \$6 more on sugar per year than in the absence of the quota. Most Americans, of course, did not know of the quota and would not care much about it since each one spends only a few dollars per year on sugar, but with fewer than 1,000 large sugar producers in the United States, the sugar quota raised their average profits by about \$2 million per year (no wonder American sugar interests lobbied the federal government so strenuously to keep the quota in place!). Since removing the sugar quota is estimated to lead to about 7,000 jobs lost in the U.S. sugar industry in 2005, this meant that the *consumer cost* of each job saved in the U.S. sugar-growing industry was about \$243,000 (the loss of the consumer surplus of \$1.7 billion from the U.S. sugar quota divided by the 7,000 jobs saved). Since 2005 (and to a large extent due to the realization of its high cost), protection of the U.S. sugar industry has declined sharply, and so has its cost and inefficiency.

Sources: USITC, *The Economic Effects of Significant U.S. Import Restraints and Seventh Update,* Washington, D.C., February 2007 and August 2011.

9.2B Comparison of an Import Quota to an Import Tariff

The shift of D_X to D'_X in Figure 9.1 points to one of several important differences between an import quota and an equivalent (implicit) import tariff. That is, with a given import quota, an increase in demand will result in a higher domestic price and greater domestic production than with an equivalent import tariff. On the other hand, with a given import tariff, an increase in demand will leave the domestic price and domestic production unchanged but will result in higher consumption and imports than with an equivalent import quota (see Figure 9.1). A downward shift in D_X as well as shifts in S_X can be analyzed in an analogous manner but are left as end-of-chapter problems. Since adjustment to any shift in D_X or S_X occurs in the domestic *price* with an (effective) import quota but in the *quantity of imports* with a tariff, an import quota completely replaces the market mechanism rather than simply altering it (as an import tariff does).

A second important difference between an import quota and an import tariff is that the quota involves the distribution of import licenses. If the government does not auction off these licenses in a competitive market, firms that receive them will reap monopoly profits. In that case, the government must decide the basis for distributing licenses among potential importers of the commodity. Such choices may be based on arbitrary official judgments rather than on efficiency considerations, and they tend to remain frozen even in the face of changes in the relative efficiency of various actual and potential importers of the commodity. Furthermore, since import licenses result in monopoly profits, potential importers are likely to devote a great deal of effort to lobbying and even bribing government officials to obtain them (in so-called rent-seeking activities). Thus, import quotas not only replace the market mechanism but also result in waste from the point of view of the economy as a whole and contain the seeds of corruption.

Finally, an import quota limits imports to the specified level with *certainty*, while the trade effect of an import tariff may be uncertain. The reason for this is that the shape or elasticity of D_X and S_X is often not known, making it difficult to estimate the import tariff required to restrict imports to a desired level. Furthermore, foreign *exporters* may absorb all or part of the tariff by increasing their efficiency of operation or by accepting lower profits. As a result, the actual reduction in imports may be less than anticipated. Exporters cannot do this with an import quota since the *quantity* of imports allowed into the nation is clearly specified by the quota. It is for this reason, and also because an import quota is less "visible," that domestic producers strongly prefer import quotas to import tariffs. However, since import quotas are more restrictive than equivalent import tariffs, society should generally resist these efforts. As we will see in Section 9.7A, one of the provisions of the Uruguay Round was to change import quotas and other nontariff barriers into equivalent tariffs (a process known as "tariffication").

9.3 Other Nontariff Barriers and the New Protectionism

In this section, we examine trade barriers other than import tariffs and quotas. These include voluntary export restraints and technical, administrative, and other regulations. Trade restrictions also result from the existence of international cartels and from dumping and export subsidies. During the past two decades, these nontariff trade barriers (NTBs), or the

new protectionism, have become more important than tariffs as obstructions to the flow of international trade and represent a major threat to the world trading system. In this section, we examine NTBs and the new protectionism, starting with voluntary export restraints.

9.3A Voluntary Export Restraints

One of the most important of the nontariff trade barriers, or NTBs, is voluntary export restraints (VERs). These refer to the case where an importing country induces another nation to reduce its exports of a commodity "voluntarily," under the threat of higher all-around trade restrictions, when these exports threaten an entire domestic industry. Voluntary export restraints have been negotiated since the 1950s by the United States, the European Union, and other industrial nations to curtail exports of textiles, steel, electronic products, automobiles, and other products from Japan, Korea, and other nations. These are the mature industries that faced sharp declines in employment in the industrial countries during the past three decades. Sometimes called "orderly marketing arrangements," these voluntary export restraints have allowed the United States and other industrial nations making use of them to save at least the appearance of continued support for the principle of free trade. The Uruguay Round required the phasing out of all VERs by the end of 1999 and the prohibition on the imposition of new VERs.

When voluntary export restraints are successful, they have all the economic effects of (and therefore can be analyzed in exactly the same way as) equivalent import quotas, except that they are administered by the exporting country, and so the revenue effect or rents are captured by foreign exporters. An example of this is provided by the "voluntary" restraint on Japanese automobile exports to the United States negotiated in 1981 (see Case Study 9-2). The United States also negotiated voluntary export restraints with major steel suppliers in 1982 that limited imports to about 20 percent of the U.S. steel market. It has been estimated that these agreements have saved about 20,000 jobs but raised the price of steel in the United States by 20 to 30 percent. These VERs expired in 1992 but were immediately replaced by

CASE STUDY 9-2 Voluntary Export Restraints (VERs) on Japanese Automobiles to the United States and Europe

From 1977 to 1981, U.S. automobile production fell by about one-third, the share of imports rose from 18 to 29 percent, and nearly 300,000 auto workers in the United States lost their jobs. In 1980, the Big Three U.S. automakers (GM, Ford, and Chrysler) suffered combined losses of $4 billion. As a result, the United States negotiated an agreement with Japan that limited Japanese automobile exports to the United States to 1.68 million units per year from 1981 to 1983 and to 1.85 million units for 1984 and 1985. Japan "agreed" to restrict its automobile exports out of fear of still more stringent import restrictions by the United States.

Automakers from the United States generally used the time from 1981 to 1985 wisely to lower breakeven points and improve quality, but the cost improvements were not passed on to consumers, and Detroit reaped profits of nearly $6 billion in 1983, $10 billion in 1984, and $8 billion in 1985. Japan gained by exporting higher-priced autos and earning higher profits. The big loser was

(continued)

CASE STUDY 9-2 Continued

the American public, which had to pay about $660 more for U.S.-made automobiles and $1,300 more for Japanese cars in 1984. The total cost of the agreement to U.S. consumers was estimated to be $15.7 billion from 1981 through 1984 and 44,000 U.S. automakers' jobs were saved at the cost of more than $100,000 each.

Since 1985, the United States has not asked for a renewal of the VER agreement, but Japan unilaterally limited its auto exports (to 2.3 million from 1986 to 1991 and 1.65 million afterward) in order to avoid more trade frictions with the United States. From the late 1980s, Japan invested heavily in producing automobiles in the United States in so-called transplant factories, and by 1996, Japan was producing more than 2 million cars in the United States and had captured 23 percent of the U.S. auto market. By 2008, Japanese automakers' share of the U.S. market had reached 35 percent (between domestic production and imports).

Following the U.S. lead, Canada and Germany also negotiated restrictions on Japanese exports (France and Italy already had very stringent quotas). A 1991 agreement to limit the Japanese share of the European Union's auto market to 16 percent expired at the end of 1999, when the share of Japanese cars (imports and production in Europe) was 11.4 percent of the European market. That share exceeded 13 percent in 2008 and was rising. In the United States, foreign automakers now sell more cars in the United States (imports and U.S. produced) than Detroit's Big Three. In 2009, GM filed for bankruptcy and survived only with $49.5 billion of taxpayer money invested by the U.S. government, giving the U.S. government a 61 percent ownership of the automaker. Chrysler also survived with government help and was subsequently acquired by FIAT of Italy. Despite the weak economy in 2011, U.S. automakers increased production and sales and even took back some market from Japanese producers. In 2010, GM sold more locally produced cars in China than in the United States!

Sources: U.S. International Trade Commission, *A Review of Recent Developments in the U.S. Automobile Industry Including an Assessment of the Japanese Voluntary Restraint Agreements* (Washington, D.C.: February 1985); "Japanese Cars Set Europe Sales Record," *The Japan Times*, January 16, 2005, p. 1; "America's Other Auto Industry," *The Wall Street Journal*, December 1, 2008, p. A22; "The Medicine Starts to Work," *The Economist*, May 22, 2010, p. 69; and "U.S. Automakers Getting Back on Track at Just the Right Time," *Money Morning*, October 11, 2011, p. 1.

industry demands for antidumping duties against foreign steel exporters (see Section 9.3D), which resulted in bitter disputes between the United States, Japan, the European Union, and other nations.

Voluntary export restraints were less effective in limiting imports than import quotas because the exporting nations agree only reluctantly to curb their exports. Foreign exporters also tend to fill their quota with higher-quality and higher-priced units of the product over time. This product upgrading was clearly evident in the case of the Japanese voluntary restraint on automobile exports to the United States. Furthermore, as a rule, only major supplier countries were involved, leaving the door open for other nations to replace part of the exports of the major suppliers and also for transshipments through third countries.

9.3B Technical, Administrative, and Other Regulations

International trade is also hampered by numerous technical, administrative, and other regulations. These include *safety regulations* for automobile and electrical equipment, *health regulations* for the hygienic production and packaging of imported food products, and

labeling requirements showing origin and contents. Many of these regulations serve legitimate purposes, but some (such as the French ban on scotch advertisements and the British restriction on the showing of foreign films on British television) are only thinly veiled disguises for restricting imports.

Other trade restrictions have resulted from laws requiring governments to buy from domestic suppliers (the so-called government procurement policies). For example, under the "Buy American Act" passed in 1933, U.S. government agencies gave a price advantage of up to 12 percent (50 percent for defense contracts) to domestic suppliers. As part of the Tokyo Round of trade liberalization (see Section 9.6D), the United States and other nations agreed on a government procurement code to bring these practices and regulations into the open and give foreign suppliers a fair chance.

Much attention has also been given in recent years to *border taxes*. These are rebates for internal *indirect taxes* given to exporters of a commodity and imposed (in addition to the tariff) on importers of a commodity. Examples of indirect taxes are excise and sales taxes in the United States and the value-added tax (VAT) in Europe. Since most government revenues are raised through direct taxes (such as income taxes) in the United States and through indirect taxes (such as the value-added tax) in Europe, United States exporters receive much lower rebates than European exporters (or no rebate at all) and are thus at a competitive disadvantage.

International commodity agreements and *multiple exchange rates* also restrict trade. However, as the former are of primary concern to developing nations and the latter relate to international finance, they are discussed in Chapter 11 and Chapter 18, respectively.

9.3c International Cartels

An international cartel is an organization of suppliers of a commodity located in different nations (or a group of governments) that agrees to restrict output and exports of the commodity with the aim of maximizing or increasing the total profits of the organization. Although *domestic* cartels are illegal in the United States and restricted in Europe, the power of *international* cartels cannot easily be countered because they do not fall under the jurisdiction of any one nation.

The most notorious of present-day international cartels is OPEC (Organization of Petroleum Exporting Countries), which, by restricting production and exports, succeeded in quadrupling the price of crude oil between 1973 and 1974. Another example is the International Air Transport Association, a cartel of major international airlines that met annually until 2007 to set international air fares and policies.

An international cartel is more likely to be successful if there are only a few international suppliers of an essential commodity for which there are no close substitutes. OPEC fulfilled these requirements very well during the 1970s. When there are many international suppliers, however, it is more difficult to organize them into an effective cartel. Similarly, when good substitutes for the commodity are available, the attempt by an international cartel to restrict output and exports in order to increase prices and profits will only lead buyers to shift to substitute commodities. This explains the failure of, or inability to set up, international cartels in minerals other than petroleum and tin, and agricultural products other than sugar, coffee, cocoa, and rubber.

Since the power of a cartel lies in its ability to restrict output and exports, there is an incentive for any one supplier to remain outside the cartel or to "cheat" on it by unrestricted

sales at slightly below the cartel price. This became painfully evident to OPEC during the 1980s when high petroleum prices greatly stimulated petroleum exploration and production by nonmembers (such as the United Kingdom, Norway, and Mexico). The resulting increase in supply, together with conservation measures that reduced the increase in the demand for petroleum products, led to sharply lower petroleum prices in the 1980s and most of the 1990s as compared to the 1970s. It also showed that, as predicted by economic theory, cartels are inherently unstable and often collapse or fail. If successful, however, a cartel could behave exactly as a monopolist (a centralized cartel) in maximizing its total profits (see Section A9.1).

9.3D Dumping

Trade barriers may also result from dumping. Dumping is the export of a commodity at below cost or at least the sale of a commodity at a lower price abroad than domestically. Dumping is classified as persistent, predatory, and sporadic. Persistent dumping, or international price discrimination, is the *continuous* tendency of a domestic monopolist to maximize total profits by selling the commodity at a higher price in the domestic market (which is insulated by transportation costs and trade barriers) than internationally (where it must meet the competition of foreign producers). Section A9.2 shows how a domestic monopolist can determine the exact prices to charge domestically and internationally to maximize total profits in cases of persistent dumping, or international price discrimination.

Predatory dumping is the *temporary* sale of a commodity at below cost or at a lower price abroad in order to drive foreign producers out of business, after which prices are raised to take advantage of the newly acquired monopoly power abroad. Sporadic dumping is the *occasional* sale of a commodity at below cost or at a lower price abroad than domestically in order to unload an unforeseen and temporary surplus of the commodity without having to reduce domestic prices.

Trade restrictions to counteract *predatory* dumping are justified and allowed to protect domestic industries from unfair competition from abroad. These restrictions usually take the form of *antidumping* duties to offset price differentials, or the threat to impose such duties. However, it is often difficult to determine the type of dumping, and domestic producers invariably demand protection against any form of dumping. By so doing, they discourage imports (the "harassment thesis") and increase their own production and profits (rents). In some cases of persistent and sporadic dumping, the benefit to consumers from low prices may actually exceed the possible production losses of domestic producers.

Over the past four decades, Japan was accused of dumping steel and television sets in the United States, and European nations of dumping cars, steel, and other products. Many industrial nations, especially those that belong to the European Union, have a tendency to persistently dump agricultural commodities arising from their farm support programs. When dumping is proved, the violating nation or firm usually chooses to raise its prices (as Volkswagen did in 1976 and Japanese TV exporters in 1997) rather than face antidumping duties. In 2007, 29 countries (counting the European Union as a single member) had antidumping laws (including many developing countries).

In 1978, the U.S. government introduced a trigger-price mechanism under which a charge that steel was being imported into the United States at prices below those of the lowest-cost foreign producer (Korea in the late 1980s) was subject to a speedy antidumping investigation. If dumping was proved, the U.S. government would provide quick relief to the domestic

steel industry in the form of a duty that would bring the price of the imported steel equal to that of the lowest-cost country. Since 1992, when the voluntary export restraints on steel exports to the United States expired, U.S. steel producers have filed hundreds of antidumping suits against foreign steel producers, resulting in bitter disputes.

In 1985, U.S. producers filed antidumping suits against Japanese exporters of computer chips (the brains of computers and most modern-day machinery). An agreement was reached in 1986 under which Japan would stop dumping chips in the United States and around the world. Charging continued dumping, however, the United States imposed a 100 percent import duty on $300 million worth of Japanese exports to the United States in 1987. The tariff was removed in 1991 when Japan renegotiated the semiconductor agreement, under which Japan agreed to help foreign (U.S.) producers increase their share of the Japanese chip market from 8 percent in 1986 to 20 percent by 1992. Disagreements continued, however, when U.S. chip producers failed to achieve the agreed 20 percent market share in Japan in 1994. In 1996, the agreement was renewed, but it required only that the U.S. and Japanese computer chip industries monitor each other's markets without any market-sharing requirement.

In 1998 and 1999, the United States imposed antidumping duties on steel imports from the European Union, Japan, Korea, Brazil, and Russia, and in March 2002, it imposed a 30 percent duty on steel imports from Russia, Brazil, Japan, and China (which the WTO ruled as illegal and the United States removed in December 2003). In 2010, the WTO upheld the tariffs that the United States imposed in 2008 on Chinese-made steel pipes, tires, and other products to protect U.S. producers against Chinese dumping and government subsidies. Requests for antidumping investigations by the steel industry have been relatively frequent in recent years, notably in the United States, because of chronic excess supply in world markets.

In 2005, the United States negotiated a limit on the increase of Chinese textile and apparel exports to the United States of 7.5 percent per year until 2008 (the European Union did the same with a 10 percent limit until 2008). These restrictions were deemed necessary when the elimination of all quotas on textile and apparel exports in 2004 as part of the implementation of the Uruguay Round led to a flooding of Chinese exports of these products to the United States and the European Union. The long-running banana case, where the United States accused the European Union of restricting banana imports from Central America and the Caribbean (from American-owned plantations), was also settled in 2010 in favor of the United States.

In 2011, the United States asked the WTO to strike down China's heavy antidumping duties on U.S. chicken products; the United States and the European Union set antidumping and antisubsidy duties on Chinese coated paper (used in high-end catalogues and magazines); the United States asked the WTO to review Chinese measures restricting market access to U.S. suppliers of electronic payment services; and China itself imposed punitive duties of up to 22 percent on U.S. exports of SUVs to China.

In March 2012, the United States, Japan, and the European Union requested consultations with China under the dispute settlement system concerning China's restrictions on exports of various forms of rare earths, tungsten, and molybdenum. In May 2012, the U.S. Commerce Department found several Chinese solar-panel companies guilty of dumping and slapped 31 percent tariffs on their exports.

The number of antidumping measures in force rose from 880 in January 1998 to 1,683 in September 2011. On average, about one-half of antidumping investigations were terminated

without any measure being taken and the rest ended with the imposition of a duty or with the exporter increasing the price of the export commodity. Case Study 9-3 gives the antidumping investigations initiated in 2010 and 2011 by G20 nations.

9.3E Export Subsidies

Export subsidies are direct payments (or the granting of tax relief and subsidized loans) to the nation's exporters or potential exporters and/or low-interest loans to foreign buyers to stimulate the nation's exports. As such, export subsidies can be regarded as a form of dumping. Although export subsidies are illegal by international agreement, many nations provide them in disguised and not-so-disguised forms.

For example, all major industrial nations give foreign buyers of the nation's exports low-interest loans to finance the purchase through agencies such as the U.S. Export–Import Bank. These low-interest credits finance about 2 percent of U.S. exports but a much larger percentage of Japan's, France's, and Germany's exports. Indeed, this is one of the most serious trade complaints that the United States has against other industrial countries today. The amount of the subsidy provided can be measured by the difference between the interest that would have been paid on a commercial loan and what in fact is paid at the subsidized rate.

CASE STUDY 9-3 Antidumping Investigations by G20 Members

Table 9.1 gives the antidumping investigations initiated by G20 members (the most important developed and developing nations and the European Union) between October 2010 and April 2012. The table shows that the total number of antidumping investigations initiated declined from 78 from October 2010 to April 2011 to 73 from October 2011 to April 2012 (there were 119 in 2009 at the height of the financial crisis). In 2012, Brazil had the largest number (16), followed by the European Union (EU, as a separate entity from its members) with 13, The United States with 12, and India with 12. The other members of the G20 (France, Germany, Italy, Japan, the United Kingdom, Indonesia, and Saudi Arabia) had none in 2010 to 2012. The products on which the most antidumping investigations were initiated were metals, chemicals, plastics, textiles, and machinery.

TABLE 9.1. Antidumping Investigations Initiated in 2010–2012 by G20 Members

G20 Member	Oct. 2010–April 2011	Oct. 2011–April 2012	G20 Member	Oct. 2010–April 2012	Oct. 2010–April 2012
Brazil	25	16	China	4	3
EU	8	13	Turkey	1	3
United States	9	12	Canada	0	3
India	15	8	Mexico	2	2
Argentina	11	4	Korea	0	2
Australia	2	4	Mexico	2	5
Russia	1	4	South Africa	0	1
			Total	78	73

Source: World Trade Organization, *Report on G20 Trade Measures* (Geneva: WTO, May 31, 2012), Table 4.

Another example is the U.S. "extraterritorial income" or Foreign Sales Corporations (FSC) provisions of the U.S. tax code. These have been used since 1971 by some 3,600 U.S. corporations (including Boeing, Microsoft, and Caterpillar) to set up overseas subsidiaries to enjoy partial exemption from U.S. tax laws on income earned from exports. This provision saved American companies about $4 billion in taxes each year. In 1999, the World Trade Organization (WTO) ruled that such tax relief was a form of export subsidy and ordered the United States to repeal it. The United States appealed but lost, and so in 2004 it repealed the FSC scheme or face $4 billion in sanctions. Since the United States did not eliminate all export subsidies, however, the WTO authorized the countries of the European Union to impose sanctions on $300 million of U.S. trade in 2005.

In 2010, the United States filed a case against China for illegally subsidizing the production of wind power equipment. China responded by announcing its own investigation against U.S. government policies and subsidies on renewable energy, wind energy, and solar and hydro technology products. In 2011, the WTO ruled against China's practice of limiting exports of some raw materials, such as rare earth metals that are essential in the production of many important high-tech products, on a complaint from the European Union, Mexico, and the United States.

Particularly troublesome are the very high support prices provided by the European Union (EU) to maintain its farmers' income under its common agricultural policy (CAP). These high farm subsidies lead to huge agricultural surpluses and subsidized exports, which take export markets away from the United States and other countries, and are responsible for some of the sharpest trade controversies between the United States and the European Union (see Case Study 9-4).

CASE STUDY 9-4 Agricultural Subsidies in OECD Countries

Table 9.2 gives the financial assistance that Organization for Economic Cooperation and Development (OECD) countries provided to their agriculture, both in billions of U.S. dollars and as a *producer subsidy estimate* (i.e., as a percentage of gross farm receipts) in 2005 and 2010. The table shows that in 2010, the European Union spent the most on agricultural subsidies ($101.4 billion), followed by Japan ($52.9 billion) and the United States ($25.6 billion). The producer subsidy estimate (PSE) in the European Union was more than 2.9 times and that of Japan and 7.1 times that of the United States. Norway, Switzerland, Japan, and Korea provided the highest PSE. Agricultural subsidies were (and continue to be) responsible for some of the sharpest trade controversies in the world today and were responsible for the long delay in concluding the Uruguay Round and the collapse of the Doha Round (see Section 9.7).

One of the sharpest international trade controversies on agricultural subsidies was the cotton case brought by Brazil against the United States in 2002 on $3 billion of subsidies that the latter provided to its cotton farmers. In 2004, the WTO ruled those subsidies to be "inconsistent to WTO commitments" (i.e., to be illegal). Not satisfied with the steps undertaken by the United States to remove subsidies, Brazil announced retaliatory tariffs of $829.3 million on U.S. goods in 2009. But in 2010, Brazil decided to delay their application, with the United States setting up a $147.3 million fund providing technical assistance to Brazil's cotton sector and promising to remove cotton subsidies in its 2012 U.S. farm bill.

(continued)

CASE STUDY 9-4 Continued

TABLE 9.2. Agricultural Subsidies and Producer-Subsidy Equivalents in Various OECD Countries in 2005 and 2010

Country	Billions of U.S. Dollars		Subsidy as a Percentage of Agricultural Output	
	2005	2010	2005	2010
United States	41.0	25.6	15	7
European Union	130.8	101.4	32	20
Japan	44.6	52.9	54	50
Canada	6.5	7.4	22	18
Australia	1.4	1.0	4	2
Norway	3.1	3.6	67	61
Switzerland	5.6	5.4	68	54
Mexico	5.0	6.2	13	12
Korea	23.5	17.5	62	45
Turkey	12.6	22.1	25	28
All Industrial Countries	272.1	227.3	28	18

Sources: Organization for Economic Cooperation and Development, *Agricultural Policies in OECD Countries: Monitoring and Evaluation* (Paris: OECD, 2011), Tables 3.1 and R. Schnepf, *Brazil's WTO Case Against U.S. Cotton Program* (Washington D.C.: Congressional Research Service, June 30, 2010.

Serious controversies also arise from the subsidies that the EU provides to its aircraft (Airbus) industry and Japan's Ministry of International Trade and Industry (MITI) to its computer and other high-tech industries. In 2010, the WTO ruled that both Airbus and Boeing had illegally subsidized their development of new aircrafts over the past decades—but that Airbus was much more guilty and subject to heavier penalties. In 2011, Airbus announced that it had eliminated all illegal subsidies on its planes, but Boeing disputes the claim.

Countervailing duties (CVDs) are often imposed on imports to offset export subsidies by foreign governments. Case Study 9-5 examines the extent of nontariff barriers on the imports of the United States, the European Union, Japan, and Canada.

CASE STUDY 9-5 Pervasiveness of Nontariff Barriers

Table 9.3 gives the pervasiveness of all types of nontariff trade barriers (voluntary export restraints, antidumping measures, technical and other regulations, and countervailing duties) in effect in the United States, the European Union, Japan, and Canada in 1996. The pervasiveness of nontariff trade barriers is measured by the percentage of tariff lines affected. For example, 2.8 percent of the U.S. food, beverage, and tobacco trade was affected by some type of nontariff trade barriers in 1996, as compared with 17.2 percent in the European Union, 5.9 percent in Japan, and 0.4 percent in Canada. From the table, we see that by far the most protected sector in all countries or regions is textiles and apparel. On an overall basis, the trade-weighted percentage of nontariff trade barriers on all manufactured products was 17.9 percent in the United States, 13.4 percent in the European Union, 10.3 percent in Japan, and 7.8 percent in

(continued)

■ CASE STUDY 9-5 Continued

Canada. These averages are likely to be lower today as a result of the implementation of the provisions of the Uruguay Round, but more recent data are not available. They compare with regular average tariff rates (shown in Case Study 8-1) of 3.3 percent for the United States, 4.0 percent for the European Union, 2.5 percent for Japan, and 4.0 for Canada in 2004. Smaller developed nations made much less use of nontariff trade barriers than large nations, while developing countries made much more use of them.

■ TABLE 9.3. The Pervasiveness of Nontariff Barriers in Large Developed Nations

	Percent of Tariff Lines Affected			
Product	United States	European Union	Japan	Canada
Food, beverage, and tobacco	2.8	17.2	5.9	0.4
Textiles and apparel	67.5	75.2	31.9	42.9
Wood and wood products	0.6	0.0	0.0	3.2
Paper and paper products	1.1	0.7	0.0	0.4
Chemicals, petroleum products	3.3	2.9	0.9	0.6
Nonmetallic mineral products	3.6	0.0	0.0	0.0
Basic metal industries	30.4	0.6	5.1	1.7
Fabricated metal products	5.9	0.0	0.0	2.2
Other manufacturing	1.7	0.0	0.0	0.9
Average manufacturing	17.9	13.4	10.3	7.8

Sources: World Trade Organization, *Market Access: Unfinished Business* (Geneva: WTO, 2001, p. 21); and WTO, *Annual Report 2011* (Geneva: WTO, 2011).

9.3F Analysis of Export Subsidies

Export subsidies can be analyzed with Figure 9.2, which is similar to Figure 8.1. In Figure 9.2, D_X and S_X represent Nation 2's demand and supply curves of commodity X. If the free trade world price of commodity X were \$3.50 (instead of \$1.00, as in Figure 8.1), Nation 2 would produce 35X ($A'C'$), consume 20X ($A'B'$), and *export* the remaining 15X ($B'C'$). That is, at prices above \$3 (point E in the figure), Nation 2 became an exporter rather than being an importer of commodity X.

If the government of Nation 2 (assumed to be a small country) now provides a subsidy of \$0.50 on each unit of commodity X exported (equal to an ad valorem subsidy of 16.7 percent), P_X rises to \$4.00 for domestic producers and consumers of commodity X. At P_X = \$4, Nation 2 produces 40X ($G'J'$), consumes 10X ($G'H'$), and exports 30X ($H'J'$). The higher price of commodity X benefits producers but harms consumers in Nation 2. Nation 2 also incurs the cost of the subsidy.

Specifically, domestic consumers lose \$7.50 (area $a' + b'$ in the figure), domestic producers gain \$18.75 (area $a' + b' + c'$), and the government subsidy is \$15 ($b' + c' + d'$). Note that area d' is not part of the gain in producer surplus because it represents the rising domestic cost of producing more units of commodity X. Nation 2 also incurs the protection cost or deadweight loss of \$3.75 (the sum of the areas of triangles $B'H'N' = b' =$ \$2.50 and $C'J'M' = d' =$ \$1.25).

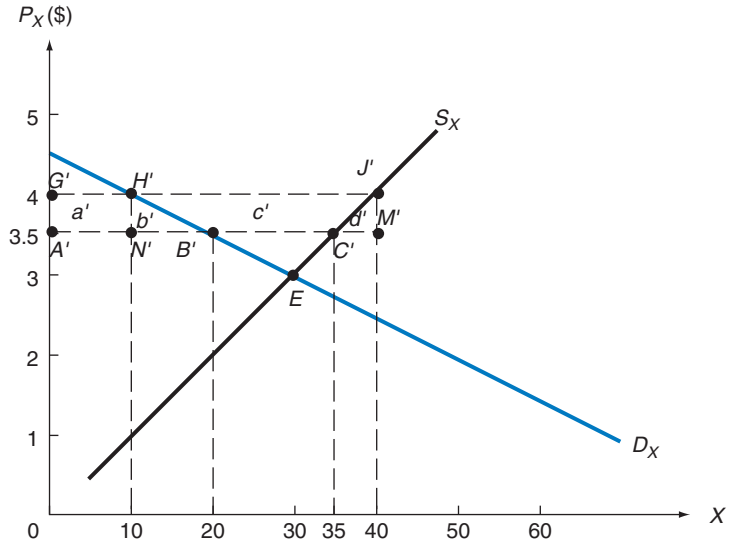

FIGURE 9.2. Partial Equilibrium Effect of an Export Subsidy.
At the free trade price of $P_X = \$3.50$, small Nation 2 produces 35X ($A'C'$), consumes 20X ($A'B'$), and exports 15X ($B'C'$). With a subsidy of \$0.50 on each unit of commodity X exported, P_X rises to \$4.00 for domestic producers and consumers. At $P_X = \$4$, Nation 2 produces 40X ($G'J'$), consumes 10X ($G'H'$), and exports 30X ($H'J'$). Domestic consumers lose \$7.50 (area $a' + b'$), domestic producers gain \$18.75 (area $a' + b' + c'$), and the government subsidy is \$15 ($b' + c' + d'$). The protection cost or deadweight loss of Nation 2 is \$3.75 (the sum of triangles $B'H'N' = b' = \$2.50$ and $C'J'M' = d' = \$1.25$).

Since domestic producers gain less than the sum of the loss of domestic consumers and the cost of the subsidy to Nation 2's taxpayers (i.e., since Nation 2 incurs a net loss equal to the protection cost or deadweight loss of \$3.75), the question is: Why would Nation 2 subsidize exports? The answer is that domestic producers may successfully lobby the government for the subsidy or Nation 2's government may want to promote industry X, if industry X is a desired high-technology industry (this will be discussed in Section 9.5). Note that foreign consumers gain because they receive 30X instead of 15X at $P_X = \$3.50$ with the subsidy. If Nation 2 were not a small nation, it would also face a decline in its terms of trade because of the need to reduce P_X in order to be able to export more of commodity X.

9.4 The Political Economy of Protectionism

In this section, we analyze the various arguments for protection. These range from clearly fallacious propositions to arguments that can stand up, with some qualification, to close economic scrutiny.

9.4A Fallacious and Questionable Arguments for Protection

One *fallacious* argument is that trade restrictions are needed to *protect domestic labor against cheap foreign labor*. This argument is fallacious because even if domestic wages are higher than wages abroad, domestic labor *costs* can still be lower if the productivity

of labor is sufficiently higher domestically than abroad. Even if this were not the case, mutually beneficial trade could still be based on comparative advantage, with the cheap-labor nation specializing in the production and exporting of labor-intensive commodities, and the expensive-labor nation specializing in the production and exporting of capital-intensive commodities (refer back to Section 2.4).

Another *fallacious* argument for protection is the scientific tariff. This is the tariff rate that would make the price of imports equal to domestic prices and (so the argument goes) allow domestic producers to meet foreign competition. However, this would eliminate international price differences and trade in all commodities subject to such "scientific" tariffs.

Two *questionable* arguments are that protection is needed (1) to reduce domestic unemployment and (2) to cure a deficit in the nation's balance of payments (i.e., the excess of the nation's expenditures abroad over its foreign earnings). Protection would reduce domestic unemployment and a balance-of-payments deficit by leading to the substitution of imports with domestic production. However, these are *beggar-thy-neighbor* arguments for protection because they come at the expense of other nations. Specifically, when protection is used to reduce domestic unemployment and the nation's balance-of-payments deficit, it causes greater unemployment and worsened balance of payments abroad. As a result, other nations are likely to retaliate, and all nations lose in the end. Domestic unemployment and deficits in the nation's balance of payments should be corrected with appropriate monetary, fiscal, and trade policies (discussed in Chapters 18 and 19) rather than with trade restrictions.

9.4B The Infant-Industry and Other Qualified Arguments for Protection

One argument for protection that stands up to close economic scrutiny (but must nevertheless be qualified) is the infant-industry argument. It holds that a nation may have a potential comparative advantage in a commodity, but because of lack of know-how and the initial small level of output, the industry will not be set up or, if already started, cannot compete successfully with more established foreign firms. *Temporary* trade protection is then justified to establish and protect the domestic industry during its "infancy" until it can meet foreign competition, achieve economies of scale, and reflect the nation's long-run comparative advantage. At that time, protection is to be removed. However, for this argument to be valid, the return in the grown-up industry must be sufficiently high also to offset the higher prices paid by domestic consumers of the commodity during the infancy period.

The infant-industry argument for protection is correct but requires several important qualifications which, together, take away most of its significance. First of all, it is clear that such an argument is more justified for developing nations (where capital markets may not function properly) than for industrial nations. Second, it may be difficult to identify which industry or potential industry qualifies for this treatment, and experience has shown that protection, once given, is difficult to remove. Third, and most important, what trade protection (say, in the form of an import tariff) can do, an equivalent production *subsidy* to the infant industry can do better. The reason is that a purely *domestic distortion* such as this should be overcome with a *purely domestic policy* (such as a direct production subsidy to the infant industry) rather than with a trade policy that also distorts relative prices and domestic consumption. A production subsidy is also a more direct form of aid and is easier to remove than an import tariff. One practical difficulty is that a subsidy

requires revenues, rather than generating them as, for example, an import tariff does. But the principle remains.

The same general principle also holds for every other type of domestic distortion. For example, if an industry generates an *external economy* (i.e., a benefit to society at large, say, by training workers who then leave to work in other industries), there is likely to be underinvestment in the industry (because the industry does not receive the full benefit from its investments). One way to encourage the industry and confer greater external economies on society would be to restrict imports. This stimulates the industry, but it also increases the price of the product to domestic consumers. A better policy would be to provide a direct subsidy to the industry. This would stimulate the industry without the consumption distortion and loss to consumers that result from trade restrictions. Similarly, a direct tax would also be better than a tariff to discourage activities (such as automobile travel) that give rise to *external diseconomies* (pollution) because the tax does not distort relative prices and consumption. The general principle that the best way to correct a *domestic* distortion is with *domestic* policies rather than with trade policies is shown graphically in Section A9.3 of the appendix.

Trade restrictions may be advocated to protect domestic industries important for national defense. But even in this case, direct production subsidies are generally better than tariff protection. Some tariffs can be regarded as "bargaining tariffs" that are to be used to induce other nations to agree to a mutual reduction in tariffs. Here, political scientists may be more qualified to judge how effective they are in achieving their intended purpose. The closest we come to a truly valid economic argument for protection is the *optimum tariff* discussed in Section 8.6. That is, if a nation is large enough to affect its terms of trade, the nation can exploit its market power and improve its terms of trade and welfare with an optimum tariff. However, other nations are likely to retaliate so that in the end of nations lose. Be that as it may, *Broda, Limao, and Weinstein* (2009) provide evidence that countries set higher tariffs on goods with lower export supply elasticites than on goods with higher supply elasticities.

9.4c Who Gets Protected?

By increasing the commodity price, trade protection benefits producers and harms consumers (and usually the nation as a whole). However, since producers are few and stand to gain a great deal from protection, they have a strong incentive to lobby the government to adopt protectionist measures. On the other hand, since the losses are diffused among many consumers, each of whom loses very little from the protection, they are not likely to effectively organize to resist protectionist measures. Thus, there is a bias in favor of protectionism. An example is provided by the U.S. sugar quota (see Case Study 9-1).

In recent years, economists have developed several theories regarding which groups and industries get protected, and some of these theories have been empirically confirmed. In industrial countries, protection is more likely to be provided to labor-intensive industries employing unskilled, low-wage workers who would have great difficulty in finding alternative employment if they lost their present jobs. Some empirical support has also been found for the *pressure-group* or *interest-group* theory (see Hilmann, 1989; Grosman and Helpman, 1994), which postulates that industries that are highly organized (such as the automobile

industry) receive more trade protection than less organized industries. An industry is more likely to be organized if it is composed of only a few firms. Also, industries that produce consumer products generally are able to obtain more protection than industries producing intermediate products used as inputs by other industries because the former industries can exercise *countervailing power* and block protection (since that would increase the price of their inputs).

Furthermore, more protection seems to go to geographically decentralized industries that employ a large number of workers than to industries that operate in only some regions and employ relatively few workers. The large number of workers has strong voting power to elect government officials who support protection for the industry. Decentralization ensures that elected officials from many regions support the trade protection. Another theory suggests that trade policies are biased in favor of maintaining the *status quo*. That is, it is more likely for an industry to be protected now if it was protected in the past. Governments also seem reluctant to adopt trade policies that result in large changes in the distribution of income, regardless of who gains and who loses. Finally, protection seems to be more easily obtained by those industries that compete with products from developing countries because these countries have less economic and political power than industrial countries to successfully resist trade restrictions against their exports.

Some of the above theories are overlapping and some are conflicting, and they have been only partially confirmed empirically. The most highly protected industry in the United States today is the textiles and apparel industry. Case Study 9-6 provides an estimate of the benefit to the world economy from complete trade liberalization.

CASE STUDY 9-6 Benefits to the World Economy from Complete Trade Liberalization

Table 9.4 shows the economic benefit of complete trade liberalization on high-income countries, developing countries, and the world as a whole, coming from liberalizing trade in agriculture, textiles, and other manufactured goods; in billions of dollars, as dollars per person, and as percentages of GDPs. All benefits are cumulative to the year 2015. Thus, the first line of the table shows that the total cumulative benefit from complete liberalization in trade in agriculture would be $126 billion for high-income countries and $56 billion for developing countries, for an overall total of $182 billion for the world as a whole by the year 2015. Complete liberalization of trade in textiles and other manufactured goods would provide smaller benefits.

The first column of the table shows that high-income countries would receive a total benefit of $197 billion from the complete liberalization of trade in all sectors (this comes to $194.63 dollars per capita) or 0.60 percent of high-income countries' GDPs, while developing countries would receive a total benefit of $90 billion ($17.59 per person) or 0.80 percent of developing countries' GDPs. For the world as a whole, the total benefit would be $287 billion ($46.84 per capita) or 0.70 percent of world GDP. Thus, half of the total gains would come from agriculture and two-thirds of the total dollar gains would go to high-income countries (but developing countries would gain more as a percentage of their GDPs).

(continued)

■ CASE STUDY 9-6 Continued

■ TABLE 9.4. Benefits to the World Economy from Complete Trade Liberalization

Liberalizing Sector	High-Income Countries	Developing Countries	World
		Total amounts, billions of dollars	
Agriculture	126	56	182
Textiles	14	24	38
Other	57	10	67
Total	197	90	287
		Per capita, dollars per person	
Agriculture	124.48	10.95	29.70
Textiles	13.83	4.69	6.20
Other	56.31	1.95	10.93
Total	194.63	17.59	46.84
		Percentage of GDP	
Agriculture	0.38	0.50	0.44
Textiles	0.04	0.21	0.09
Other	0.17	0.09	0.16
Total	0.60	0.80	0.70

Source: K. Anderson and W. Martin, ed., *Agricultural Reform and the Doha Development Agenda* (Washington, D.C.: World Bank, 2006), Ch. 12.

9.5 Strategic Trade and Industrial Policies

In this section we examine strategic and industrial policies, first in general (Section 9.5A) and then by utilizing game theory (Section 9.5B). In Section 9.5C we discuss the U.S. response to foreign industrial targeting and strategic trade policies.

9.5A Strategic Trade Policy

Strategic trade policy is a relatively recent development advanced in favor of an activist trade policy and protectionism. According to this argument, a nation can create a comparative advantage (through temporary trade protection, subsidies, tax benefits, and cooperative government–industry programs) in such fields as semi-conductors, computers, telecommunications, and other industries that are deemed crucial to future growth in the nation. These high-technology industries are subject to high risks, require large-scale production to achieve economies of scale, and give rise to extensive external economies when successful. Strategic trade policy suggests that by encouraging such industries, the nation can reap the large external economies that result from them and enhance its future growth prospects. This is similar to the infant-industry argument in developing nations, except that it is advanced for industrial nations to acquire a comparative advantage in crucial high-technology industries. Most nations do some of this. Indeed, some economists would go so far as to say that a great deal of the postwar industrial and technological success of Japan was due to its strategic industrial and trade policies.

Examples of strategic trade and industrial policy are found in the steel industry in the 1950s, in semiconductors in the 1970s and 1980s in Japan, in the development of the Concorde (the supersonic aircraft) in the 1970s, and the Airbus from the 1970s in Europe. Semiconductors in Japan are usually given as the textbook case of successful strategic trade and industrial policy. The market for semiconductors (such as computer chips, which are used in many new products) was dominated by the United States in the 1970s. Starting in the mid-1970s, Japan's powerful Ministry of Trade and Industry (MITI) targeted the development of this industry by financing research and development, granting tax advantages for investments in the industry, and fostering government–industry cooperation, while protecting the domestic market from foreign (especially U.S.) competition.

These policies are credited for Japan's success in nearly wresting control of the semiconductor market from the United States in the mid-1980s. Most economists remain skeptical, however, and attribute Japan's stunning performance in this field primarily to other forces, such as greater educational emphasis on science and mathematics, higher rates of investment, and a willingness to take a long-run view of investments rather than stressing quarterly profits, as in the United States. In steel, the other targeted industry in Japan, the rate of return was lower than the average return for all Japanese industries during the postwar period. In Europe, the Concorde was a technological feat but a commercial disaster, and Airbus Industrie would not have survived without continued heavy government subsidies.

While strategic trade policy can theoretically improve the market outcome in oligopolistic markets subject to extensive external economies and increase the nation's growth and welfare, even the originators and popularizers of this theory recognize the serious difficulties in carrying it out. First, it is extremely difficult to pick winners (i.e., choose the industries that will provide large external economies in the future) and devise appropriate policies to successfully nurture them. Second, since most leading nations undertake strategic trade policies at the same time, their efforts are largely neutralized, so that the potential benefits to each may be small. Third, when a country does achieve substantial success with strategic trade policy, this comes at the expense of other countries (i.e., it is a beggar-thy-neighbor policy) and so other countries are likely to retaliate. Faced with all these practical difficulties, even supporters of strategic trade policy grudgingly acknowledge that *free trade is still the best policy, after all*. That is, free trade may be suboptimal in theory, but it is optimal in practice.

9.5B Strategic Trade and Industrial Policies with Game Theory

We can use game theory to examine strategic trade and industrial policy. We can best show this by an example. Suppose that both Boeing and Airbus are deciding whether to produce a new aircraft. Suppose also that because of the huge cost of developing the new aircraft,

TABLE 9.5. Two-Firm Competition and Strategic Trade Policy

		Airbus	
		Produce	Don't Produce
Boeing	Produce	−10, −10	100, 0
	Don't produce	0, 100	0, 0

a single producer would have to have the entire world market for itself to earn a profit, say, of $100 million. If both producers produce the aircraft, each loses $10 million. This information is shown in Table 9.5. The case where both firms produce the aircraft and each incurs a loss of $10 million is shown in the first row and first column (the top left-hand corner) of Table 9.5. If only Boeing produces the aircraft, Boeing makes a profit of $100 million, while Airbus makes a zero profit (the first row and second column, or top right-hand corner of the table). On the other hand, if Boeing does not produce the aircraft while Airbus does, Boeing makes zero profit while Airbus makes a profit of $100 million (the second row and first column, or bottom left-hand corner of the table). Finally, if neither firm produces the aircraft, each makes a zero profit (the second row and the second column, or bottom right-hand corner of the table).

Suppose that for whatever reason Boeing enters the market first and earns a profit of $100 million. Airbus is now locked out of the market because it could not earn a profit. This is the case shown in the first row and second column (the top right-hand corner) of the table. If Airbus entered the market, both firms would incur a loss (and we would have the case shown in the first row and first column, or top left-hand corner of the table). Suppose that now European governments give a subsidy of $15 million per year to Airbus. Then Airbus will produce the aircraft even though Boeing is already producing the aircraft because with the $15 million subsidy Airbus would turn a loss of $10 million into a profit of $5 million. Without a subsidy, however, Boeing will then go from making a profit of $100 million (without Airbus in the market) to incurring a loss of $10 million afterwards. (We are still in the first row and first column, or top left-hand corner of the table, but with the Airbus entry changed from −10 without the subsidy to +5 with the subsidy.) Because of its unsubsidized loss, Boeing will then stop producing the aircraft, thus eventually leaving the entire market to Airbus, which will then make a profit of $100 million without any further subsidy (the second row and first column, or bottom left-hand corner of the table).

The U.S. government could, of course, retaliate with a subsidy of its own to keep Boeing producing the aircraft. Except in cases of national defense, however, the U.S. government has been much less disposed to grant subsidies to firms than are European governments. While the real world is much more complex than this, we can see how a nation could overcome a market disadvantage and acquire a strategic comparative advantage in a high-tech field by using an industrial and strategic trade policy. In fact, in 2000 Airbus decided to build its super-jumbo A380 capable of transporting 550 passengers to be ready by 2006 at a development cost of over $10 billion, and thus compete head-on with the Boeing 747 (which has been in service since 1969 and can carry up to 475 passengers).

Boeing greeted Airbus's decision to build its A380 by announcing in 2001 plans to build the new Boeing 787 Dreamliner jet that can transport, nonstop, and with 20 percent greater fuel efficiency, 250 passengers to any point on earth at close to the speed of sound by 2008. Boeing believes that passengers prefer arriving at their destinations sooner and avoiding congested hubs and the hassle and delays of intermediate stops. Then in 2005, Boeing surprised Airbus by also announcing a new bigger version of its Boeing 747 (the 747-8) to enter service in 2009. Airbus responded by announcing the development of Airbus A350 to compete head-on with the new Boeing 787 with billions of repayable government loans—leading Boeing to file an additional complaint against Airbus at the WTO.

The A380 came into service in 2008 with a delay of more than two years and huge cost overruns, while the first Boeing 787 came off the assembly line in 2011 with a three-year delay and also large cost overruns. As pointed out in Section 9.3E, the WTO ruled in 2010

that both Airbus and Boeing had illegally subsidized their development of new aircrafts over the past decades—but that Airbus was much more guilty and subject to heavier penalties. In 2011, Airbus announced that it had eliminated all illegal subsidies on its planes, but Boeing disputed the claim, and so the dispute goes on.

This type of analysis was first introduced into international trade by *Brander and Spencer* (1985). One serious shortcoming of this analysis is that it is usually very difficult to accurately forecast the outcome of government industrial and trade policies (i.e., get the data to fill a table such as Table 9.5). Even a small change in the table could completely change the results. For example, suppose that if both Airbus and Boeing produce the aircraft, Airbus incurs a loss of $10 million (as before), but Boeing now makes a profit of $10 million (without any subsidy), say, because it is more efficient. Then, even if Airbus produces the aircraft with the subsidy, Boeing will remain in the market because it makes a profit without any subsidy. Then Airbus would require a subsidy indefinitely, year after year, in order to continue to produce the aircraft. In this case, giving a subsidy to Airbus does not seem to be such a good idea. Thus, it is extremely difficult to correctly carry out this type of analysis. We would have to correctly forecast the precise outcome of different strategies, and that is very difficult to do. This is why most economists would say that free trade may still be the best policy after all!

9.5c The U.S. Response to Foreign Industrial Targeting and Strategic Trade Policies

While generally opposed to industrial targeting and strategic trade policy domestically, the United States did respond to and retaliated against countries that adopted these policies to the detriment of U.S. economic interests. The best example of direct federal support for civilian technology was Sematech. This was established in Austin, Texas, in 1987 as a nonprofit consortium of 14 major U.S. semiconductor manufacturers with an annual budget of $225 million ($100 million from the government and the rest from the 14 member firms). Its aim was to help develop state-of-the-art manufacturing techniques for computer chips to help its members better compete with Japanese firms. By 1991, Sematech claimed that as a result of its efforts U.S. computer chip companies had caught up with their Japanese competitors. Since then, Sematech has become entirely private (i.e., it no longer receives U.S. government financial support), and in 1998 it created International Sematech, a wholly owned subsidiary of 12 major computer companies, including some foreign ones (with headquarters in Albany, New York). Currently International Sematech has 18 members.

The United States has also taken unilateral steps to force foreign markets to open more widely to U.S. exports and has retaliated with restrictions of its own against nations that failed to respond. An example was the 1991 semiconductor agreement under which Japan agreed to help U.S. computer chip producers gain a 20 percent share of the Japanese chip market. The agreement was renewed in 1996 but required only that U.S. and Japanese computer chip industries monitor each other's markets without any market-sharing requirement. Since then, U.S. computer chip companies have retaken world leadership in the field, and so the agreement is no longer in operation.

In the early 1990s, the United States also negotiated an agreement with Japan to open the Japanese construction market to bidding by U.S. firms under the threat to close the U.S. market to Japanese construction firms. On a broader scale, the United States and Japan

engaged in negotiations (called the Structural Impediments Initiative, or SII) during the mid-1990s aimed, among other things, at opening the entire Japanese distribution system more widely to U.S. firms. Furthermore, the United states requested that other countries, such as Brazil, China, and India, remove excessive restrictions against specific U.S. exports and it demanded protection for its intellectual property (such as patented materials) from unauthorized and uncompensated use.

9.6 History of U.S. Commercial Policy

This section surveys the history of U.S. commercial policy. We start by examining the Trade Agreements Act of 1934 and then discuss the importance of the General Agreement on Tariffs and Trade (GATT). Next we examine the 1962 Trade Expansion Act and the results of the Kennedy Round of trade negotiations. Subsequently, we discuss the Trade Reform Act of 1974 and the outcome of the Tokyo Round of trade negotiations. Finally, we examine the 1984 and the 1988 Trade Acts.

9.6A The Trade Agreements Act of 1934

During the early 1930s, world trade in general and U.S. exports in particular fell sharply because of (1) greatly reduced economic activity throughout the world as a result of the Great Depression and (2) passage in 1930 of the Smoot–Hawley Tariff Act, under which the average import duty in the United States reached the all-time high of 59 percent in 1932, provoking foreign retaliation.

The Smoot–Hawley Tariff Act was originally introduced to aid American agriculture. But through log-rolling in Congress, large tariffs were imposed on manufactured imports as well. The aim was clearly beggar-thy-neighbor to restrict imports and stimulate domestic employment. The bill was passed despite the protest of 36 countries that the tariff would seriously hurt them and that they would retaliate. President Hoover signed the bill into law in spite of a petition signed by more than 1,000 American economists urging him to veto it. The result was catastrophic. By 1932, 60 countries retaliated with stiff tariff increases of their own, in the face of the deepening world depression. The net result was a collapse of world trade (American imports in 1932 were only 31 percent of their 1929 level, and exports fell even more), and this contributed in a significant way to the spreading and deepening of the depression around the world.

To reverse the trend toward sharply reduced world trade, the U.S. Congress under the new Roosevelt administration passed the Trade Agreements Act of 1934. The general principles embodied in this act remained the basis for all subsequent trade legislation in the United States. The act transferred the formulation of trade policy from the more politically minded Congress to the President and authorized the President to negotiate with other nations *mutual* tariff reductions by as much as 50 percent of the rates set under the Smoot–Hawley Tariff Act. The Trade Agreements Act was renewed a total of 11 times before it was replaced in 1962 by the Trade Expansion Act. By 1947, the average U.S. import duty was 50 percent below its 1934 level.

The Trade Agreements Act of 1934 and all subsequent trade legislation were based on the most-favored-nation principle. This nondiscrimination principle extended to all trade partners any *reciprocal* tariff reduction negotiated by the United States with any of its

trade partners. The United States would similarly benefit from any bilateral tariff reduction negotiated between any other two nations that were signatories of the most-favored-nation agreement. However, this bilateral trade approach faced the serious shortcoming that tariff reductions were negotiated for the most part only in commodities that *dominated* bilateral trade. Otherwise, many "freeloader" nations, not directly involved in the negotiations and not making any tariff concession (reduction) of their own, would also have benefited from reciprocal tariff reductions negotiated between any other two nations.

9.6B The General Agreement on Tariffs and Trade (GATT)

The General Agreement on Tariffs and Trade (GATT) was an international organization, created in 1947 and headquartered in Geneva (Switzerland), devoted to the promotion of freer trade through multilateral trade negotiations. Originally, it was thought that GATT would become part of the International Trade Organization (ITO), whose charter was negotiated in Havana in 1948 to regulate international trade. When the ITO was not ratified by the U.S. Senate and by the governments of other nations, GATT (which was less ambitious than ITO) was salvaged.

GATT rested on three basic principles:

1. *Nondiscrimination*. This principle refers to the unconditional acceptance of the most-favored-nation principle discussed earlier. The only exceptions to this principle are made in cases of economic integration, such as customs unions (discussed in Chapter 10), and in the trade between a nation and its former colonies and dominions.
2. *Elimination of nontariff trade barriers* (such as quotas), except for agricultural products and for nations in balance-of-payments difficulties.
3. *Consultation among nations in solving trade disputes* within the GATT framework.

By 1993, a total of 123 nations (including the United States and all major countries, with the exception of the countries of the former Soviet Union and China) were signatories of the GATT, and 24 other nations had applied for admission. The agreement covered over 90 percent of world trade.

Under the auspices of GATT, tariffs were reduced by a total of about 35 percent in five different trade negotiations between 1947 and 1962. In 1965 GATT was extended to allow preferential trade treatment to developing nations and to allow them to benefit from tariff reductions negotiated among industrial nations without reciprocity (these are discussed in Chapter 11).

Greater success in tariff reductions was not achieved before 1962 because tariff negotiations were conducted on a *product-by-product* basis and because in the 1950s the U.S. Congress attached serious protectionist devices to the periodic renewals of the Trade Agreements Act. These protectionist devices were:

1. Peril-point provisions, which prevented the president from negotiating any tariff reduction that would cause serious damage to a domestic industry.
2. The escape clause, which allowed any domestic industry that claimed injury from imports to petition the International Trade Commission (the U.S. Tariff Commission until 1975), which could then recommend to the president to revoke any *negotiated*

tariff reduction. A rising share of imports in an industry was sufficient to "prove" injury.

3. The national security clause, which prevented tariff reductions (even if already negotiated) when they would hurt industries important for national defense.

Since meaningful tariff reductions *necessarily* hurt some industries (those in which the nation has a comparative disadvantage), these trade restrictions, especially the escape clause, represented a serious obstacle to greater tariff reductions.

9.6C The 1962 Trade Expansion Act and the Kennedy Round

It was primarily to deal with the new situation created by the formation of the European Union, or Common Market, that the Trade Expansion Act of 1962 was passed by the Congress to replace the Trade Agreements Act.

The Trade Expansion Act of 1962 authorized the president to negotiate across-the-board tariff reductions of up to 50 percent of their 1962 level (and to remove completely duties that were 5 percent or less in 1962). This replaced the product-by-product approach of the Trade Agreements Act. In addition, the 1962 act provided Trade Adjustment Assistance (TAA) to displaced workers and firms injured by tariff reductions. This replaced the no-injury doctrine and took the form of retraining and moving assistance to displaced workers and tax relief, low-cost loans, and technical help to injured firms.

The principle of adjustment assistance was the most significant aspect of the Trade Expansion Act of 1962 since society at large (which was the beneficiary of the trade expansion resulting from tariff reductions) was made to bear, or at least share, the burden of adjustment. However, until the early 1970s, when the criteria for assistance were relaxed, few workers or firms qualified for adjustment assistance. In 1980, the trade assistance program's peak year, more than half a million workers received about $1.6 billion in assistance. Since then, however, the program has shrunk considerably, with only about 30,000 to 40,000 workers receiving a total of $200 million to $400 million in aid each year. The amount of aid provided was greatly expanded to $2 billion per year by the *Trade Adjustment Reform Act of 2002* . In 2010, approximately 140,000 workers received *Trade Adjustment Assistance (TAA)* for a total of $1 billion.

Under the authority of the 1962 Trade Expansion Act, the United States initiated, under GATT auspices, wide-ranging multilateral trade negotiations. These were known as the Kennedy Round. Negotiations in the Kennedy Round were completed in 1967 and resulted in an agreement to cut average tariff rates on industrial products by a total of 35 percent of their 1962 level, to be phased over a five-year period. By the end of 1972, when the agreement was fully implemented, average tariff rates on industrial products were less than 10 percent in industrial nations. However, there were still many serious nontariff trade barriers, especially in agriculture.

9.6D The Trade Reform Act of 1974 and the Tokyo Round

The 1962 Trade Expansion Act was replaced in 1974 by the Trade Reform Act. This authorized the president (1) to negotiate tariff reductions of up to 60 percent and remove

tariffs of 5 percent or less and (2) to negotiate reductions in nontariff trade barriers. The act also liberalized the criteria for adjustment assistance.

Under the authority of the Trade Reform Act of 1974, the United States participated in the multilateral tariff negotiations known as the Tokyo Round (actually conducted in Geneva, except for the opening meeting held in Tokyo), which were concluded in 1979. Negotiated tariff reductions phased over an eight-year period, starting in 1980, averaged 31 percent for the United States, 27 percent for the European Union, and 28 percent for Japan. A code of conduct for nations in applying nontariff trade barriers was also prescribed to reduce the restrictive effect of these nontariff barriers. This code included (1) agreement on a government procurement code, (2) uniformity in the application of duties in countervailing and antidumping cases, and (3) a "generalized system of preferences" to the manufactured, semimanufactured, and selected other exports of developing nations. (However, textiles, shoes, consumer electronics, steel, and many other products of great importance to developing nations were excluded.)

The total static gains from trade liberalization under the Tokyo Round amounted to an estimated $1.7 billion annually. With the dynamic gains arising from economies of scale and greater all-around efficiency and innovations, the figure might rise to as high as $8 billion per year. These figures, however, are only rough "guesstimates." Although the United States as a whole benefited from the tariff reductions negotiated under the Tokyo Round, labor (the relatively scarce factor in the United States) and industries with a relatively larger share of small businesses (which are more highly protected in the United States) were somewhat hurt.

9.6E The 1984 and 1988 Trade Acts

The Trade Reform Act of 1974 was followed by the U.S. Trade and Tariff Act of 1984. This law had three major provisions: (1) It authorized the president to negotiate international agreements for the protection of intellectual property rights and to lower barriers to trade in services, high-technology products, and direct investments. (2) It extended the Generalized System of Preferences (GSP), which granted preferential access to the exports of developing countries to the United States (see Section 11.6) until July 1993, but with "graduation" or the removal of preferential access for the exports of the most advanced of the developing countries, such as Korea and Taiwan. (3) It provided authority for negotiations that led to a free trade agreement with Israel. It was under the provisions of this act that the United States called for new multilateral trade negotiations (the Uruguay Round) that started in 1986 (see Section 9.7A).

The Omnibus Trade and Competitiveness Act of 1988 included a Super 301 provision, which (1) calls on the U.S. Special Trade Representative (USTR) to designate priority countries that maintain numerous and pervasive trade barriers, (2) sets a rigorous schedule for negotiations to be held on eliminating those barriers, and (3) requires retaliation by curbing imports from those countries if the negotiations are not successful. In May 1989, the United States named Japan, Brazil, and India as the most unfair traders. Japan was cited for the refusal of its public authorities to purchase U.S. satellites and supercomputers and for excluding U.S.-manufactured forest products. Brazil was cited for licensing requirements it imposes on practically all imports, and India for restrictions on foreign investments and curbs on foreign-based insurance companies. Under the Super 301 provision of the 1988

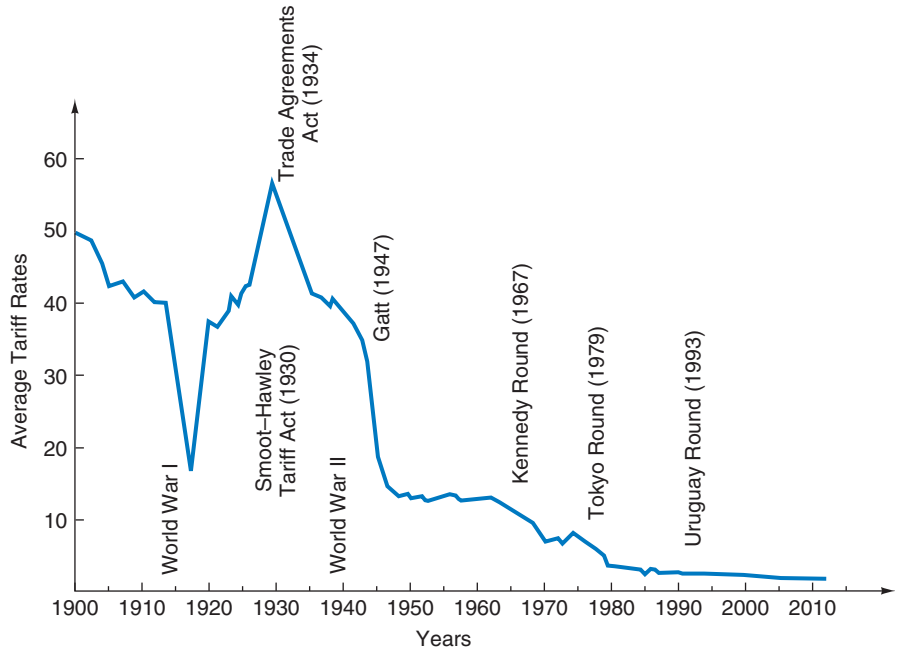

FIGURE 9.3. U.S. Average Tariff Rates on Dutiable Imports, 1900–2012.
Average tariff rates on dutiable imports in the United States ranged from the high of 59 percent, reached in 1932 under the Smoot–Hawley Tariff Act of 1930, to less than 5 percent in 2005. The average tariff rates can fall even without a change in tariff schedules when the proportion of low-tariff imports increases (as after 1972, as a result of the sharp rise in low-tariff petroleum imports).
Sources: Historical Abstract of the United States (Washington, D.C.: U.S. Government Printing Office, 1972); and *Statistical Abstract of the United States* (Washington, D.C.: U.S. Government Printing Office, 2012) for years since 1971.

Trade Act, these nations faced tariffs of 100 percent on selected exports to the United States if they did not relax trade restrictions.

Figure 9.3 summarizes the history of average tariff rates on dutiable imports in the United States from 1900 to 2010. Tariffs in the other leading developed nations have shown similar declines and are now comparable to U.S. rates (see Table 8.1). Note that the average tariff rates shown in the figure fall even without a change in tariff schedules when the proportion of low-tariff imports increases. For example, the fall in the average tariff rates after 1972 was due mostly to the sharp increase in low-tariff imports of petroleum in the United States.

9.7 The Uruguay Round, Outstanding Trade Problems, and the Doha Round

In December 1993, the Uruguay Round of multilateral trade negotiations was completed, but many trade problems remain. In this section, we first review the provisions of the Uruguay Round and then discuss the outstanding trade problems facing the world today, which were supposed to be taken up in the Doha Round.

9.7A The Uruguay Round

In December 1993, the Uruguay Round, the eighth and most ambitious round of multilateral trade negotiations in history, in which 123 countries participated, was completed after seven years of tortuous negotiations. The Round had started in Punta del Este in Uruguay in September 1986 and had been scheduled to be completed by December 1990, but disagreements between the United States and the European Union (EU), especially France, on reducing agricultural subsidies delayed its conclusion for three years. The aim of the Uruguay Round was to establish rules for checking the proliferation of the new protectionism and reverse its trend; bring services, agriculture, and foreign investments into the negotiations; negotiate international rules for the protection of intellectual property rights; and improve the dispute settlement mechanism by ensuring more timely decisions and compliance with GATT rulings. The agreement was signed by the United States and most other countries on April 15, 1994, and took effect on July 1, 1995.

The major provisions of the accord were the following:

1. *Tariffs.* Tariffs on industrial products were to be reduced from an average of 4.7 percent to 3 percent, and the share of goods with zero tariffs was to increase from 20–22 percent to 40–45 percent; tariffs were removed altogether on pharmaceuticals, construction equipment, medical equipment, paper products, and steel.

2. *Quotas.* Nations were to replace quotas on agricultural imports and imports of textiles and apparel (under the Multifiber Agreement) with less restrictive tariffs by the end of 1999 for agricultural products and by the end of 2004 for textiles and apparel; tarrifs on agricultural products were to be reduced by 24 percent in developing nations and by 36 percent in industrial nations, and tariffs on textiles were to be cut by 25 percent.

3. *Antidumping.* The agreement provided for tougher and quicker action to resolve disputes resulting from the use of antidumping laws, but it did not ban their use.

4. *Subsidies.* The volume of subsidized agricultural exports was to be reduced by 21 percent over a six-year period; government subsidies for industrial research were limited to 50 percent of applied research costs.

5. *Safeguards.* Nations could temporarily raise tariffs or other restrictions against an import surge that severely harmed domestic industry, but it barred countries from administering health and safety standards unless based on scientific evidence and not simply to restrict trade. For example, a nation could only keep out beef imports from cattle raised with growth hormones by showing that the beef so produced was unsafe for human consumption.

6. *Intellectual property.* The agreement provided for 20-year protection of patents, trademarks, and copyrights, but it allowed a 10-year phase-in period for patent protection in pharmaceuticals for developing countries.

7. *Services.* The United States failed to secure access to the markets of Japan, Korea, and many developing nations for its banks and security firms, and did not succeed in having France and the European Union lift restrictions on the showing of American films and TV programs in Europe.

8. *Other industry provisions.* The United States and Europe agreed to continue talking about further limiting government subsidies to civil aircraft makers, opening up the distance telephone market, and limiting European subsidies to steelmakers; the United States also indicated that it intended to continue negotiating the further opening of the Japanese computer chip market.

9. *Trade-related investment measures.* The agreement phased out the requirement that foreign investors (such as automakers) buy supplies locally or export as much as they import.

10. *World Trade Organization.* The agreement also called for the replacement of the General Agreement on Tariffs and Trade (GATT) secretariat with the World Trade Organization (WTO) in Geneva with authority not only in trade in industrial products but also in agricultural products and services. Trade disputes were also to be settled by a vote of two-thirds or three-quarters of the nations rather than unanimously as under GATT (which meant that the guilty nation could block any action against it).

Although the completion of the Uruguay Round was in and of itself a great achievement, only some of its aims were met and many trade problems remain (see the next section). It was estimated that the implementation of the Uruguay Round by 2005 increased world welfare by $73 billion, of which $58.3 billion of the gains went to developed countries and $19.2 billion to developing countries (see Case Study 9-7). The collapse of the Uruguay Round, however, would have been disastrous psychologically and could have led to the unrestrained proliferation of trade restrictions and destructive trade wars.

During 1996 and 1997, multilateral agreements to open up trade in telecommunications, financial services, and information technology (that were not reached at the Uruguay Round) were concluded. Over time, these agreements could provide larger gains in trade volumes than the entire Uruguay Round treaty. In 1999, the European Union reached a free trade agreement with Mexico (which became effective in July 2000) to end all tariffs on their bilateral trade. China became the 144th member of the WTO in 2001 and Russia became the 156th member in 2012.

In August 2002, Congress granted the president trade promotion authority, formerly known as "*fast track*," to negotiate broad trade agreements that allowed no amendments, but only an up-or-down vote by Congress to ratify or reject the agreements. The purpose of this legislation was to assure foreign governments that Congress would act expeditiously on any agreement that they negotiate with the U.S. Government. The legislation also required the president to consider environmental protection, labor rights, and antidumping laws in his negotiations, and it provided up to $1.2 billion a year in health insurance and other benefits to workers who lost their jobs, and added farmers and ranchers to the list of those eligible. Fast track, however, was not renewed after it expired in 2007.

Since 2001, the United States has reached free trade agreements (FTAs) with Australia, Bahrain, Chile, Jordan, Morocco, Peru, and Singapore, and signed DRCAFTA (Dominica Republic-Central American Free Trade Agreement, with Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and the Dominican Republic). Then, in October 2011, the United States ratified the FTA with South Korea, Colombia, and Panama (in July 2011, the

CASE STUDY 9-7 Gains from the Uruguay Round

Table 9.6 provides an estimate of the welfare gains, in dollars and as a percentage of GPD, as well as the percentage increase in real wages, in various nations and regions of the world resulting from the full implementation of the Uruguay Round by 2005. The table shows that the world welfare rises by $73 billion, of which $53.8 billion or 74 percent goes to the developed countries and the rest to developing countries. European Union (EU) and the European Free Trade Area (EFTA) gain the most ($23.7 billion), followed by the United States (with a gain of $19.8 billion) and Japan (with $6.9 billion). Among developing nations, India gains the most ($2.8 billion), followed by the rest of South Asia ($2.7 billion), Malaysia ($2.6 billion), and South Korea and the Philippines (with $2.5 billion each). China gains $1.3 billion. Only Hong Kong loses a little ($100 million). In terms of percentages of GDP and real wages, the gains of developed nations are less than 0.4 percent, while those of developing countries exceed 2 percent of GDP for the rest of South Asia, Singapore, Malaysia, and the Philippines (except for a gain of 1.92 percent in real wages for Singapore).

TABLE 9.6. Real Income Gains from the Uruguay Round

Country or Region	Welfare Gains (billions of dollars)	Welfare Gains (percent of GDP)	Gains in Real Wages (percent)
Developed Countries:			
United States	19.8	0.22	0.21
Europe Union & EFTA	23.7	0.22	0.21
Japan	6.9	0.11	0.09
Canada	1.6	0.22	0.20
Australia & New Zealand	1.8	0.34	0.36
Developing Countries:			
Asia			
India	2.8	0.68	0.54
Sri Lanka	0.1	0.70	0.54
Rest of South Asia	2.7	2.29	2.43
China	1.3	0.14	0.23
Hong Kong	−0.1	−0.11	0.47
South Korea	2.5	0.45	0.45
Singapore	1.6	2.11	1.92
Indonesia	0.6	0.24	0.32
Malaysia	2.6	2.19	2.56
Philippines	2.5	2.82	3.91
Thailand	0.8	0.40	0.76
Other:			
Mexico	0.1	0.01	0.03
Turkey	0.2	0.11	0.09
Central Europe	1.2	0.33	0.34
Central and South America	0.3	0.02	0.04
Total	73.0		

Source: D. K. Brown, A. V. Deardorff, and R. Stern, ''Computational Analysis of Multilateral Trade Liberalization in the Uruguay Round,'' *Discussion Paper No. 489*, School of Public Affairs, University of Michigan, December 8, 2002.

CASE STUDY 9-8 The Multilateral Rounds of Trade Negotiations

Table 9.7 provides a summary of the year, the place and name of the trade round, the number of participating countries, the subject covered, and the percentage of tariff reduction achieved. From the table we see that the most significant rounds sponsored by the GATT were those of 1947, 1964–1967 (Kennedy Round), 1973–1979 (Tokyo Round), and 1986–1993 (Uruguay Round). The new Doha Round (2001–) sponsored by the WTO is the largest and most difficult one, but it seems unlikely to be successfully concluded.

TABLE 9.7. The GATT Trade Rounds and the WTO Round

Year	Place/Name	Number of Participating Countries	Subject Covered	Percentage Cut in Tariffs
1947	Geneva	23	Tariffs	21
1949	Annecy	13	Tariffs	2
1951	Torquay	38	Tariffs	3
1956	Geneva	26	Tariffs	4
1960–1961	Geneva (Dillon Round)	26	Tariffs	2
1964–1967	Geneva (Kennedy Round)	62	Tariffs and antidumping measures	35
1973–1979	Geneva (Tokyo Round)	99	Tariffs, nontariff measures, multilateral agreements	33
1986–1993	Geneva (Uruguay Round)	125	Tariffs, nontariff measures, agriculture, services, textiles intellectual property, dispute settlement, creation of WTO	34
2001–	Doha (Doha Round)	150	To liberalize global trade in agriculture, industrial goods, and service	To be determined

Source: World Trade Organization, *Annual Report* (Geneva: WTO, 2011).

European Union also signed a free trade agreement with South Korea). Case Study 9-8 provides a summary of the eight rounds of multilateral trade negotiations conducted under the auspices of the GATT since 1947, as well as the new (ninth) Doha Round sponsored by the WTO, which was announced in November 2001 in Doha, the capital of the Gulf state of Qatar, but all but collapsed in July 2006, and all attempts to revive it have so far failed.

9.7B Outstanding Trade Problems and the Doha Round

Despite the great benefits resulting from the successful completion of the Uruguay Round, many serious trade problems remain. *One problem* is continued widespread trade protectionism. As discussed in Sections 9.3 to 9.5, advanced nations often seek to protect domestic production and jobs from foreign competition and use strategic trade and industrial policies to encourage new high-tech industries, and so do emerging market economies. Europe has

increased protection on a number of industries out of fear of turning into an industrial wasteland. Russia raised tariffs on used car imports, India banned Chinese toys, and Argentina has tightened licensing requirements on auto parts imports, textiles, and leather goods. The United States and some European countries are subsidizing their embattled automakers and car dealers, their farmers, and their banks—and so the list goes on.

A *second problem* is that subsidies and tariffs on agricultural products remain very high; antidumping measures and safeguards are still possible and frequently abused, and so the potential for serious trade disputes remains. A *third trade problem* is the tendency for the world to break up into three major trading blocs: the European Union (EU), the North America Free Trade Area (NAFTA), and a (much less defined) Asian bloc. (Trading blocs are examined in detail in Chapter 11.) Although these trading blocs could be regarded as building blocks of a freer trading system, they can also become stumbling blocks and lead to more bilateral deals, protectionism, and interbloc trade conflicts.

The *fourth problem* is the call by some developed countries, such as the United States and France, for the establishment of labor and environmental standards. These are supposed to ensure a "leveling of working conditions" between developed and developing countries and avoid "social dumping" by the latter (i.e., developing countries competing unfairly by denying their workers basic rights and decent wages and working conditions). The danger is that the movement to establish labor and environmental standards can easily be captured by protectionistic forces. The same is true for environmental standards (see Section 6.6C). Trade-related competition policies (such as subsidies and regulations) as well as *trade-related investment measures (TRIMs)* also need to be dealt with more adequately than they have been in the Uruguay Round.

An attempt was made to launch a "Millennium Round" of trade negotiations at the WTO Trade Conference held in Seattle in December 1999. The attempt failed because (1) developing countries were adamantly opposed to putting labor and environmental standards on the agenda for the new round; (2) the European Union and Japan objected to the U.S. desire to put on the agenda the complete liberalization of trade in agricultural products; and (3) the United States objected to discussing competition and investment policies that the European Union wanted. All this came up in the face of large demonstrations organized by a strong *antiglobalization movement*, which blamed globalization for many human and environmental problems worldwide and for sacrificing human and environmental well-being to the corporate profits of multinationals (see Section 1.1).

In November 2001, the Doha Round was launched in Doha, Qatar. The agenda included (1) the further liberalization of production and trade in agriculture, industrial products, and services, and (2) the further tightening of rules for antidumping measures and safeguards, as well as investment and competition policies (Case Study 9-9 gives estimates of the welfare benefits to developed and developing countries of a likely Doha scenario). From the very beginning, developing nations were reluctant to make concessions because they felt that the Uruguay Round failed to deliver a great deal of what it promised them and insisted on making the Doha Round a true "development round." The Doha Round was supposed to be concluded by the end of 2004, but after five years of negotiations the Round all but collapsed in July 2006 over disagreements over agricultural subsidies between developed and developing countries and among developed countries themselves. All attempts to revive the Doha Round had failed as of the end of 2012. The WTO has now began to discuss Plan B to reach agreement on those aspects of the Doha negotiations where agreement is possible. In the meantime, there have been renewed efforts to negotiate more bilateral deals.

CASE STUDY 9-9 Benefits from a Likely Doha Scenario

Table 9.8 gives an estimate of benefits (total, per capita, as a percentage of GDP) that developed and developing countries can expect from a "likely" Doha scenario by 2015. The "likely" scenario involves a reduction in agricultural tariffs of between 45 and 75 percent in developed countries and between 35 and 60 percent in developing countries (except for the least-developed countries, which would not be required to make any reductions in agricultural tariffs). For non-agricultural tariffs, the "likely" scenario involves a reduction in tariffs of 50 percent in developed countries and 35 percent in developing countries (and no reductions in the least-developed countries).

Table 9.8 shows that the total projected benefits of a "likely" Doha scenario would be $96 billion (or about one-third of the estimated value of full liberalization) (see Table 9.4 in Case Study 9-6), of which $80 billion would go to developed countries (representing $79.04 per capita and 0.24 percent of their GDP) and $16 billion would go to developing countries (representing $3.13 per capita and 0.14 percent of their GDP).

TABLE 9.8. Benefits from a Likely Doha Scenario

	Developed Countries	Developing Countries	World
Total amounts, billions of dollars	$80	$16	$96
Per capita, dollars per person	$79.04	$3.13	$15.67
Percentage of GDP	0.24%	0.14%	0.23%

Source: K. Anderson and W. Martin, ed., *Agricultural Reform and the Doha Development Agenda* (Washington, D.C.: World Bank, 2006), Ch. 12.

SUMMARY

1. A quota is a direct quantitative restriction on imports or exports. An import quota has the same consumption and production effects as an (equivalent) import tariff. If the government auctions off import licenses to the highest bidder in a competitive market, the revenue effect also is the same. The adjustment to any shift in demand or supply occurs in the domestic price with an import quota and in the quantity of imports with a tariff. If import licenses are not auctioned off, they lead to monopoly profits and possible corruption. An import quota is in general more restrictive than an equivalent import tariff.

2. Voluntary export restraints refer to the case where an importing nation induces another nation to curb its exports of a commodity "voluntarily," under the threat of higher all-around trade restrictions. When successful, their economic impact is the same as that of an equivalent import quota, except for the revenue effect, which is now captured by foreign suppliers. Voluntary export restraints are not likely to be completely successful in limiting imports, however, and they were for the most part phased out by the end of 1999 as a result of the Uruguay Round agreement. There are also numerous other nontariff trade restrictions. These became more important than tariffs as obstructions to the flow of international trade over the past three decades.

3. An international cartel is an organization of suppliers of a commodity located in different nations (or a group of governments) that agrees to restrict output

and exports of the commodity with the aim of maximizing or increasing the total profits of the organization. An international cartel is more likely to succeed if there are only a few international suppliers of an essential commodity for which there is no good substitute. There is also an incentive to stay out of or cheat on the cartel. Trade restrictions can also result from dumping and export subsidies. Dumping is the export of a commodity at below cost or at a lower price than it is sold domestically. Dumping can be persistent, predatory, or sporadic. Countervailing duties (CVDs) are tariffs imposed on imports to offset subsidies by foreign governments.

4. The argument that tariffs are needed to protect domestic labor against cheap foreign labor and the "scientific tariff" is clearly fallacious. Two questionable beggar-thy-neighbor arguments are that protection is needed to reduce domestic unemployment and a deficit in the nation's balance of payments. A more valid argument for protection is the infant-industry argument. However, what trade protection can do, direct subsidies and taxes can do better in overcoming purely domestic distortions. The same is true for industries important for national defense. The closest we come to a valid economic argument for protection is the optimal tariff (which, however, invites retaliation). Trade protection in the United States is usually given to low-wage workers and to large, well-organized industries producing consumer products.

5. Strategic trade and industrial policy is another qualified argument for protection. It suggests that by encouraging high-tech industries, a nation can reap the large external economies that result from them and enhance its future growth prospects. Strategic trade and industrial policy does face, however, many practical difficulties because it is difficult for nations to pick winners and because it invites retaliation. Thus, free trade may still be the best policy after all.

6. The Smoot–Hawley Tariff Act of 1930 resulted in the all-time-high average import duty in the United States of 59 percent in 1932, provoking foreign retaliation. The Trade Agreements Act of 1934 authorized the president to negotiate mutual tariff reductions of up to 50 percent under the most-favored-nation principle. A serious disadvantage was its bilateral approach. The General Agreement on Tariffs and Trade (GATT) was devoted to freer trade based on nondiscrimination, consultation, and removal of nontariff trade barriers, except in agriculture and in nations experiencing balance-of-payments difficulties. Until 1962, tariff reduction was seriously limited by product-by-product negotiations and by U.S. protectionist devices, specifically peril-point provisions, the escape clause, and the national security clause. Under the authority of the 1962 Trade Expansion Act, the United States negotiated tariff reductions averaging 35 percent on industrial products in the Kennedy Round, which was completed in 1967. The 1962 Trade Expansion Act also replaced the no-injury doctrine with adjustment assistance. Under the authority of the Trade Reform Act of 1974, the United States negotiated tariff reductions averaging 31 percent in the Tokyo Round, which was completed in 1979, and accepted a code of conduct for nominal trade barriers. The 1988 Trade Act strengthened U.S. retaliatory procedures against nations that greatly restrict U.S. exports.

7. The Uruguay Round of trade negotiations was completed in December 1993. It called for the reduction of average tariffs on industrial goods from 4.7 percent to 3 percent, for quotas to be replaced by tariffs, and for antidumping and safeguards to be tightened. The agreement also called for reduction in agricultural export subsidies and industrial subsidies, and for protection of intellectual property. During 1996 and 1997, agreements were reached to open up trade in telecommunications, financial services, and information technology. In July 2000, the EU-Mexico free trade agreement became effective; in November 2001, the Doha Round was initiated; China became the 144th member of WTO in 2001 and Russia became the 156th member in 2012; and in August 2002, Congress granted the president trade negotiating authority or fast track. The attempt to launch a new "Millennium Round" failed when nations were unable to reach agreement on the agenda at the trade conference in November 2001. The world is breaking up into a few major trading blocs, a serious antiglobalization movement has come into existence, and there are serious trade disputes among developed countries and between developed and developing nations. These problems were supposed to be resolved in the Doha Round, which all but collapsed in 2006 primarily over disagreements on agricultural subsidies.

A LOOK AHEAD

In Chapter 10, we analyze the economic impact of the formation of regional economic associations (such as the European Union and NAFTA) on the member nations and on the rest of the world. Regional economic associations eliminate tariff and other trade barriers among members but keep them against the outside world. As such, they represent a direct extension of the topics discussed in this chapter. In Chapter 11, we further extend our discussion to analyze the special trade problems of developing nations. Chapter 12 completes Part Two of the text with an examination of international resource movements and multinational corporations.

KEY TERMS

Bilateral trade, p. 279
Centralized cartel, p. 264
Countervailing duties (CVDs), p. 268
Doha Round, p. 287
Dumping, p. 264
Escape clause, p. 279
Export–Import Bank, p. 266
Export subsidies, p. 266
Foreign Sales Corporations (FSC), p. 267
Game theory, p. 275
General Agreement on Tariffs and Trade (GATT), p. 279
Industrial policy, p. 275
Infant-industry argument, p. 271
International cartel, p. 263
International Trade Organization (ITO), p. 279
Kennedy Round, p. 280
Most-favored-nation principle, p. 278
Multilateral trade negotiations, p. 279
National security clause, p. 280
New protectionism, p. 261
Nontariff trade barriers (NTBs), p. 260
Omnibus Trade and Competitiveness Act of 1988, p. 281
Peril-point provisions, p. 279
Persistent dumping, p. 264
Predatory dumping, p. 264
Quota, p. 258
Scientific tariff, p. 271
Smoot–Hawley Tariff Act of 1930, p. 278
Sporadic dumping, p. 264
Strategic trade policy, p. 274
Technical, administrative, and other regulations, p. 262
Tokyo Round, p. 281
Trigger-price mechanism, p. 264
Trade Adjustment Assistance (TAA), p. 280
Trade Agreements Act of 1934, p. 278
Trade and Tariff Act of 1984, p. 281
Trade Expansion Act of 1962, p. 280
Trade promotion authority or fast track, p. 284
Trade Reform Act of 1974, p. 280
Uruguay Round, p. 283
Voluntary export restraints (VERs), p. 261
World Trade Organization (WTO), p. 284

QUESTIONS FOR REVIEW

1. What is an import quota? How is it mostly used today? What are the partial equilibrium effects of an import quota? How are they similar to and different from the effects of an equivalent import tariff?
2. What is meant by voluntary export restraints? How has the United States used them?
3. What are the technical, administrative, and other nontariff barriers to trade? How do they restrict trade? What is the importance of these nontariff trade barriers relative to tariff barriers?
4. What are international cartels? How do their operations restrict trade? Which was the most successful international cartel during the 1970s? Why did its power decline sharply in the 1980s?
5. What is meant by dumping? What are the different types of dumping? Why is dumping undertaken? What conditions are required to make dumping

possible? Why does dumping usually lead to trade restrictions?

6. Why do nations subsidize exports? To what problems do these subsidies give rise?

7. What are the fallacious and questionable arguments for protection? Why are they fallacious and questionable?

8. What is the infant-industry argument for protection? How must this argument be qualified?

9. What are the other qualified arguments for protection? In what way must they be qualified?

10. What is meant by strategic and industrial trade policy? What is its relevance?

11. What is the importance of the Trade Agreements Act of 1934? What are the ruling principles of GATT?

12. What are the major accomplishments of the Kennedy Round? of the Tokyo Round? What do the Trade Acts of 1984 and 1988 provide?

13. What did the Uruguay Round accomplish?

14. What are the outstanding trade problems facing the world today?

15. Why do we need the Doha Round?

PROBLEMS

1. Explain why nations impose trade restrictions if free trade is the best policy.

*2. Starting with D_X and S_X and $P_X = \$1$ with free trade in Figure 9.1, analyze the partial equilibrium effects of an import quota of 30X if D_X shifts down to D''_X in such a way that D''_X is parallel to D_X and crosses S_X at $P_X = \$2.50$.

*3. Starting with D_X and S_X and $P_X = \$1$ with free trade in Figure 9.1, analyze the partial equilibrium effects of an import quota of 30X if S_X shifts up to S'_X (parallel to S_X) and crosses D_X at $P_X = \$3.50$.

4. Starting with D_X and S_X and $P_X = \$1$ with free trade in Figure 9.1, analyze the partial equilibrium effects of an import quota of 30X if S_X shifts down to S''_X (parallel to S_X) and crosses D_X at $P_X = \$2.50$.

5. Starting with D_X and S_X and $P_X = \$1$ with free trade in Figure 9.1, analyze the partial equilibrium effects of an import quota of 30X if S_X shifts down to S^*_X (parallel to S_X) and crosses D_X at $P_X = \$2.00$.

6. Starting with D_X and S_X and $P_X = \$4.50$ with free trade in Figure 9.1, analyze the partial equilibrium effects of a negotiated *export* quota of 30X.

7. Explain how the effects of a negotiated export quota of 30X, found in Problem 6, are similar to and different from those of an equivalent import tariff or quota.

8. Draw a straight-line demand curve for a commodity crossing both axes and its corresponding marginal revenue curve (lying everywhere halfway between the vertical axis and the demand curve). On the same graph, draw a hypothetical supply curve for the commodity crossing the demand and marginal revenue curves. If the demand and supply curves refer to the perfectly competitive market for exports of the commodity, determine the equilibrium price and quantity of exports of the commodity.

9. For the same statement in Problem 8, determine the equilibrium price and quantity of exports of the commodity if the supply curve refers to a cartel of exporters acting as a monopolist.

10. Compare your results of Problems 8 and 9. (*Hint*: Review the perfectly competitive and monopoly models in your principles text or notes.)

*11. Draw three sets of price-quantity axes side by side. On the first set of axes (graph), draw a straight-line demand curve (D_1) that is steep, starts at a high price, and refers to the domestic market. On the same set of axes, draw the corresponding marginal

*= Answer provided at www.wiley.com/college/salvatore.

revenue curve (MR_1). On the second graph, draw a straight-line demand curve (D_2) that is low and flat and refers to the international market. On the same (second) set of axes, draw the corresponding MR_2 curve. On the third graph, sum horizontally the MR_1 and MR_2 curves (ΣMR) and draw a marginal cost curve (MC) that intersects the ΣMR curve from below in the third graph; then draw a horizontal dashed line and extend it to the second and first graphs. The point where the horizontal dashed line crosses the MR_1 curve indicates how much the domestic monopolist should sell in the domestic market, and where the horizontal line crosses the MR_2 curve indicates how much he should sell on the international market.

(a) What price should the monopolist charge in the domestic market (P_1) and in the foreign market (P_2)?

(b) Why does this represent the best, or optimal, distribution of sales between the two markets?

12. On a set of axes measuring average costs of production on the vertical axis and the level of output on the horizontal axis, illustrate the infant-industry argument for protection by drawing the long-run average cost curve of an efficient *foreign* firm facing constant returns to scale and the long-run average cost curve of an infant industry in a developing nation that becomes more efficient than established foreign firms as it grows.

13. Indicate the strategic trade policy required (if any) if the entries in the top left-hand corner of Table 9.5 were changed to:

(a) 10, +10;

(b) + 10, 0;

(c) + 5, −10.

14. Suppose that from the free trade production point B, the nation of Figure 8.5 wants to produce 65X (point F). Indicate:

(a) How the nation could do this with a tariff or with a subsidy.

(b) Why the subsidy would be better.

APPENDIX

This appendix analyzes graphically the operation of centralized cartels, international price discrimination, and the use of taxes and subsidies instead of tariffs to correct domestic distortions. It also examines strategic trade and industrial policy more formally with game theory.

A9.1 Centralized Cartels

In Figure 9.4, D_X is the world demand curve for exports of commodity X, and MR_X is the corresponding marginal revenue curve. Note that the MR_X curve lies everywhere halfway between the vertical axis and D_X. S_X is the cartel's supply curve of exports of commodity X. S_X is the horizontal summation of the marginal curves of all cartel members (ΣMC_X). Under perfect competition, international equilibrium is at point E, at which 400X are traded at $P_X = \$3$.

An international cartel of exporters of commodity X acting as a monopolist (or *centralized cartel*) would maximize total profits by restricting exports to 300X (given by the intersection of the S_X or ΣMC_X curve with the MR_X curve at point F) and charging $P_X = \$3.50$ (given by point G on D_X). The increase in the total profits of the exporters of commodity X as a group (i.e., of the cartel) is given by the shaded area in the figure. The reason for this increase is that by restricting the total exports of commodity X to 300X, the international cartel eliminated all the exports for which MC_X exceeded MR_X, so that total profits are higher by the sum of those differences.

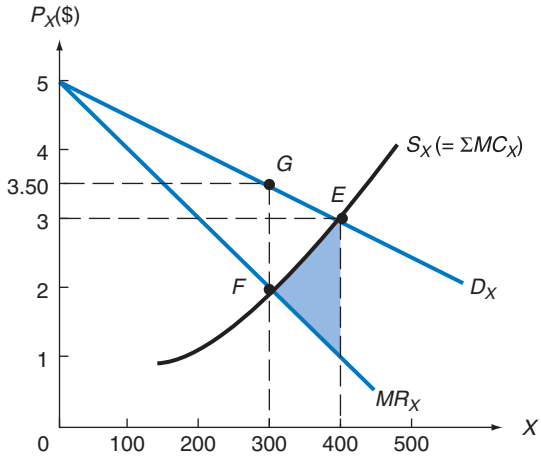

FIGURE 9.4. Maximization of the International Cartel's Total Profits.
D_X is the total demand for exports of commodity X, and S_X is the total supply of exports. Under perfect competition, equilibrium is at point E, at which 400X are traded at $P_X = \$3$. An international cartel of all exporters of commodity X that acts as a monopolist would maximize total profits by restricting exports to 300X (given by the intersection of the MR_X and the S_X or ΣMC_X curves at point F) and charging $P_X = \$3.50$ (given by point G on D_X). The total profits of the cartel are higher by the size of the shaded area in the figure.

Problem Starting with D_X and S_X in Figure 9.4, draw a figure showing the monopoly result if there are only two identical exporters of commodity X and they agree to share the market equally. This is a market-sharing cartel.

A9.2 International Price Discrimination

Persistent dumping, or international price discrimination, is illustrated in Figure 9.5. In the figure, the horizontal summation of the marginal revenue curve in the domestic market (MR_d) and the marginal revenue curve in the foreign market (MR_f) give ΣMR. Point E, where the MC curve intersects the ΣMR curve from below, indicates that the domestic monopolist should sell a *total* of 300X in order to maximize his or her total profits. The distribution of the sale of these 300X between the foreign and the domestic market is given by the point where a horizontal line from point E crosses MR_f and MR_d, respectively. Thus, the domestic monopolist should sell 200X in the foreign market at $P_X = \$3$, and 100X in the domestic market at $P_X = \$4$. P_X is higher in the domestic market (which is insulated by transportation costs and trade barriers) than in foreign markets (where the domestic monopolist faces foreign competition).

The general principle to maximize total profits is that $MR_d = MR_f$. If $MR_d \neq MR_f$, total profits could be increased by transferring sales from the market with the lower MR to the market with the higher MR until MR was the same in the two markets. $P_{f<} P_d$ because D_f is more elastic than D_d in the relevant range. D_f is more elastic than D_d because of the availability of close substitutes on the international market.

Problem If the absolute value of the price elasticity of demand in the domestic market (e_d) is 2 and e_f in the foreign market is 3, and $\Sigma MR = MC = \$10$, calculate at what price the

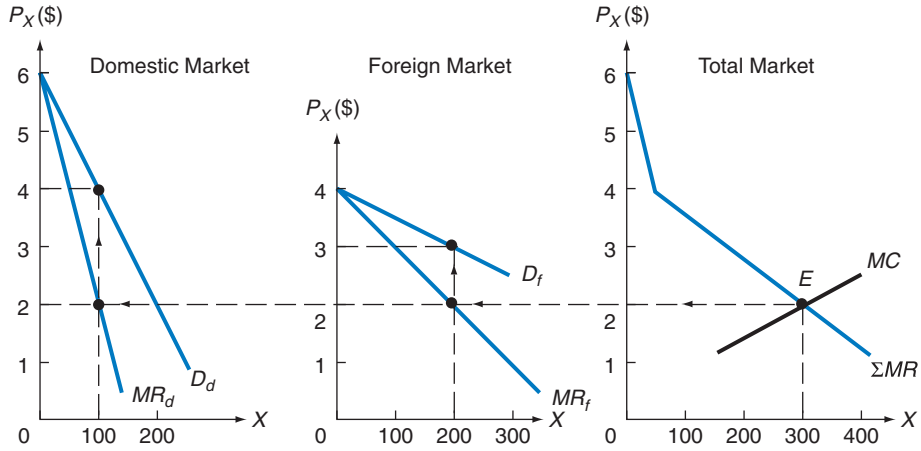

FIGURE 9.5. International Price Discrimination.
The total output that maximizes total profits is 300X and is given by point *E*, where the $\Sigma MR (= MR_d + MR_f)$ curve crosses the *MC* curve. Of these 300X, 200X should be sold in the foreign market (given by the point where a horizontal line from point *E* crosses MR_f) at $P_X = \$3$, and 100X should be sold in the domestic market (given by the point where a horizontal line from point *E* crosses MR_d) at $P_X = \$4$. The principle to maximize total profits is that $MR_d = MR_f$.

domestic monopolist practicing international price discrimination should sell in the domestic market (P_d) and in the foreign market (P_f) in order to maximize total profits. [*Hint*: Use the formula $MR = P(1-1/e)$ from microeconomic theory.]

A9.3 Tariffs, Subsidies, and Domestic Goals

In this section, we show graphically that a subsidy is better than a tariff to achieve a purely *domestic* goal. Figure 9.6 (an extension of Figure 8.5) shows that with free trade the nation produces at point B (40X and 120Y) and consumes at point E (100X and 60Y) on indifference curve III at $P_X/P_Y = P_W = 1$. If now the nation wants to produce 65X (point F in the figure), it can do so either by imposing a 100 percent import tariff on commodity X or giving a 100 percent subsidy to domestic producers of commodity X. By imposing a 100 percent tariff on the imports of commodity X (so that $P_X/P_Y = P_F = 2$), the nation will produce at point F (65X, as required, and 85Y) and consume at point H' on indifference curve II′ (if the government redistributes the tariff revenue as a *general* subsidy to consumers). So far this is the same as in Figure 8.5.

With a 100 percent subsidy to domestic producers of commodity X, the price consumers pay remains $P_X/P_Y = 1$ (as under free trade) and the nation will reach indifference curve II″ (which is higher than indifference curve II′). Thus, a subsidy is better than a tariff that gives the same amount of protection to domestic producers because the subsidy, as opposed to a tariff, does not distort the prices that consumers pay.

Problem Indicate how the nation of Figure 9.6 can reach production point B if external diseconomies in the production of X make the nation produce at point F at the free trade price of $P_X/P_Y = P_W = 1$.

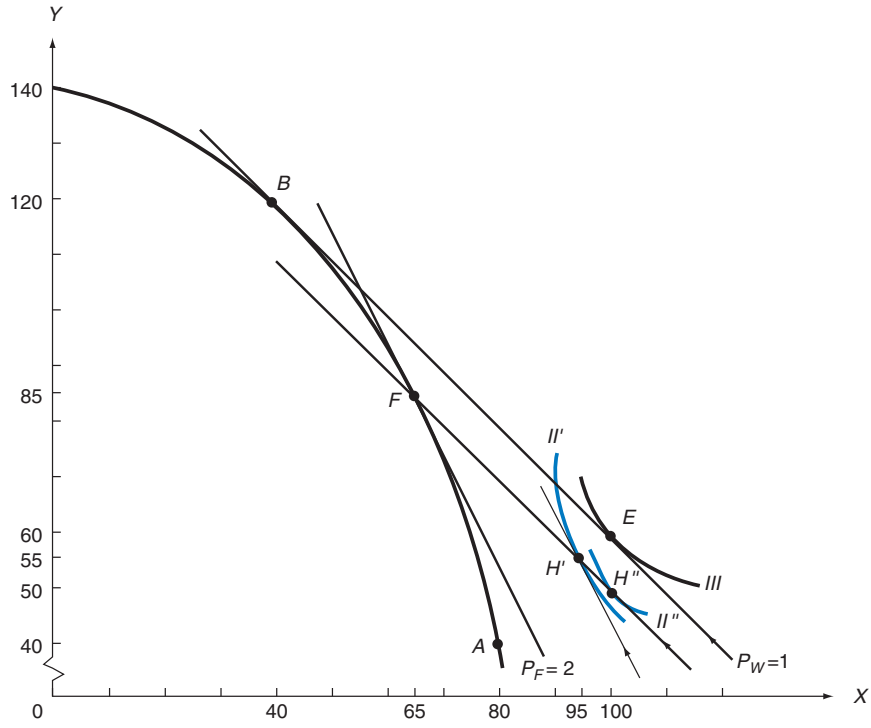

FIGURE 9.6. A Tariff vs. a Subsidy to Achieve a Domestic Goal.
With free trade the nation produces at point *B* (40X and 120Y) and consumes at point *E* with $P_X/P_Y = P_W = 1$. With a 100 percent import tariff on commodity X, $P_X/P_Y = P_F = 2$ and the nation produces 65X (point *F*) and consumes at point H′ on indifference curve II′ (as in Figure 8.5). With a 100 percent subsidy on domestic producers of X, the price consumers pay remains $P_X/P_Y = 1$ (as under free trade) and the nation reaches indifference curve II″ (which is higher than II′).

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For a discussion and evaluation of globalization, see the selected bibliography for Chapter 1.

INTERNet

For international trade policies in the United States, visit the Internet site for the Economic Report of the President (and click on the most recent year to get the latest Report), and the Internet site of the State Department, the United States Trade Representative, and the U.S. International Trade Commission, respectively, at:

http://www.gpoaccess.gov/eop

http://www.state.gov

http://www.ustr.gov

http://www.usitc.gov

For international trade policies around the world, see the Internet site of the World Trade Organization (WTO), the European Union, and the Canadian Department of Foreign Affairs, respectively, at:

http://www.wto.org

http://mkaccdb.eu.int

http://www.infoexport.gc.ca

For a discussion of "fast track," see:

http://www.citizen.org/trade/fasttrack

http://www.iie.com/publications/newsreleases/newsrelease.cfm?id=33

http://www.fasttrackhistory.org/conclusion.html

http://www.nationalaglawcenter.org/assets/crs/97-817.pdf

For dumping cases dealt with by the Canadian International Trade Tribunal, see:

http://www.citt.gc.ca

For information on the Export–Import Bank, see:

http://www.exim.gov

For government support of R&D in the United States, Japan, and Korea, see the web site of the National Science Foundation and Sematech for the United States, the Statistics Center of the Management and Coordination Agency for Japan, and the World Bank site for Korea, respectively, at:

http://www.nsf.gov/statistics/fedfunds/

http://www.sematech.org

http://www.stat.go.jp/english/index.htm

http://www.worldbank.org/research/journals/wbro/obsfeb00/art3.htm

A strong antiglobalization view is found at:

http://www.nologo.org

For international environmental laws, see:

http://www2.spfo.unibo.it/spolfo/ENVLAW.htm