# Chapter **Ten**

# Pushing Exports

Controversy over export behavior and export policy rivals the perennial fights over import barriers. On the export side, however, the fight takes on a somewhat different form. Here the fight usually centers on the artificial *promotion* of trade rather than on trade barriers. This chapter explores how both businesses and governments may push for more exports than their country would sell under ordinary competition. The underlying policy questions are: Can a country export too much for its own good or for the good of the world? Is that happening today? If so, what should an importing country do about another country's apparently excessive exports?

These questions do not arise in a vacuum. Governments, pressured by business and labor lobbies, have long fought over what producers in importing countries consider artificial and excessive exports from other countries. The heat of debate on this issue intensified during the past two decades. U.S. and European producers charged that Japan, Korea, Brazil, China, and other rapidly growing industrial powers were engaging in "unfair trade" because exports from these countries were priced too low or subsidized by their governments. These countries were repeatedly accused of violating both the rules of ordinary competition and the rules of the World Trade Organization (WTO).

To address the debate over unfair trade, we turn first to dumping, the most important way in which private firms may export more than competitive supply and demand would lead us to expect. Then we explore how governments push exports with outright or subtle subsidies.

## DUMPING

**Dumping** is selling exports at a price that is too low—less than **normal value** (or "fair market value," as it is often called in the United States). There are two meanings of *normal value*:

- The long-standing definition of *normal value* is the price charged to comparable domestic buyers in the home market (or to comparable buyers in other markets). Under this traditional definition, dumping is international price discrimination favoring buyers of exports.

- The second definition of *normal value* arose in the 1970s. It is cost-based—the average cost of producing the product, including overhead costs and profit. Under this second standard, dumping is selling exports at a price that is less than the full average cost of the product.

Why would an exporting firm engage in dumping? Why would it sell exports at a price lower than the price it charges for its product in its home market, or lower than its average cost? There are several reasons. To judge whether dumping is good or bad, it is important to understand the full range of reasons why dumping occurs.

**Predatory dumping** occurs when a firm temporarily charges a low price in the foreign export market, with the purpose of driving its foreign competitors out of business. Once the rivals are gone, the firm will use its monopoly power to raise prices and earn high profits.

**Cyclical dumping** occurs during periods of recession. During the part of the cycle when demand is low, a firm tends to lower its price to limit the decline in quantity sold. For instance, in a competitive market initially in long-run equilibrium, price equals full average cost (long-run average cost) for the representative firm. If an industry recession or an economywide recession then causes demand to decline, market price will fall below this full average cost in the short run. A firm continues to produce and sell as long as price exceeds average variable cost. If any of these sales are exports, the firm is dumping.

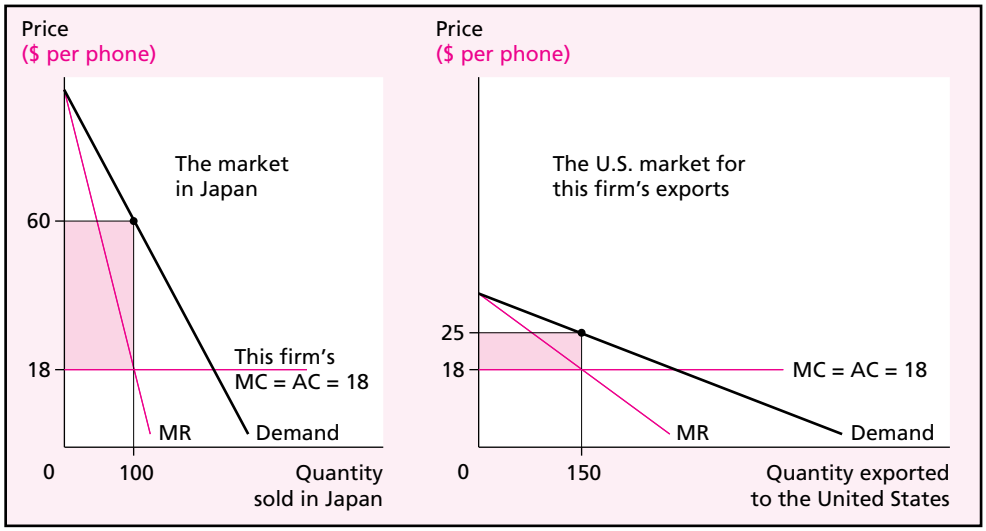
**Seasonal dumping** is intended to sell off excess inventories of a product. For instance, toward the end of a fashion season, U.S. clothing manufacturers may decide to sell off any remaining stock of swimsuits at prices that are below full average cost. That is, they have a sale. With production costs sunk, any price above the marginal cost of making the sale is sensible. If some of these low-priced sales are to Canada, the U.S. firm is dumping. Perishable agricultural products are also good candidates for seasonal dumping. A big harvest tends to lower the market price and to provide a larger quantity available for export. Similarly, dumping can be a technique for promoting new products in new markets. This is the equivalent of an introductory sale that an exporting firm could use to establish sales of its product in a new foreign market.

**Persistent dumping** occurs because a firm with market power uses **price discrimination** between markets to increase its total profit. A firm maximizes profits by charging a lower price to foreign buyers if

- It has less monopoly power (more competition) in the foreign market than it has in its home market, and if
- Buyers in the home country cannot avoid the high home prices by buying the good abroad and importing it cheaply.

When these conditions hold, the firm can make home-country buyers pay a higher price and thus earn a higher total profit. This is not predatory; it is not intended to drive any other firms out of business. And it can persist for a long time—as long as these market differences continue.

**FIGURE 10.1** Persistent Dumping




The monopolist uses price discrimination to maximize profits in two markets. The firm charges a higher price in the market where the demand curve is less elastic (steeper). In this case, that is the home market in Japan, perhaps because in its home market the firm is protected from foreign competition. In the more elastic (more competitive) U.S. market, the firm charges a lower price for its exported product. Total profits are the sum of the two shaded rectangles. The price discrimination is viable only if there is no way for consumers in the high-price market to buy the product from the low-price market, and if policymakers in the importing country do not impose antidumping duties.

Figure 10.1 shows such a case of profitable price discrimination under the simplifying assumption that the firm faces a constant marginal cost (and average cost) of production. (In addition, the marginal production cost is the same regardless of whether the product is sold in the home market or exported, because essentially the same product is sold in both places.) The illustration is based on a real case that surfaced in 1989. The U.S. government determined that firms in Japan, Korea, and Taiwan were all guilty of dumping telephones in the U.S. market, causing injury to AT&T (the plaintiff) and other U.S. firms.[1] We illustrate with the case of a single Japanese firm (e.g., Matsushita).

What makes persistent dumping profitable is that the firm faces a less elastic (steeper) demand curve in its home market than in the more competitive foreign market. That is, home-country buyers would not change the quantity they buy very much in response to price, whereas foreign buyers would quickly abandon this firm's product if the firm raised its price much. Sensing this, the firm maximizes profits by equating marginal cost and marginal revenue in each market. In

[1] The actual dumping case involved phone equipment for small businesses, although here we illustrate with the case of personal phones from Japan. The U.S. International Trade Commission estimated dumping margins (home-market price above price on sales to the United States) of 120 to 180 percent for major firms in Japan and Taiwan, but only a trivial difference for Korean firms. The Asian exporters had raised their share of the U.S. phone market for small businesses to 60 percent by 1989.

the U.S. market the profit-maximizing price is $25. With the $25 price U.S. consumers buy 150 telephones a year, at which level marginal revenue just equals the marginal cost of $18. In Japan's home market, where consumers see fewer substitutes for the major Japanese brands, the profit-maximizing price is $60. With the $60 price Japanese consumers buy 100 phones a year, and marginal cost equals marginal revenue at this quantity.

Price discrimination is more profitable for the firm than charging the same price in both markets. Charging the same price would yield lower marginal revenues in Japan than in the United States. As long as transport costs and import barriers in Japan make it uneconomical for Japanese consumers to import low-priced telephones back from the United States, the firm continues to make greater profits by charging a higher price in the Japanese market. Often tariffs or nontariff barriers to import (back into the exporting the country) are what keeps the two markets separate. These barriers also protect the dumper against foreign competition in the higher-priced home market (Japan, in this example).

## REACTING TO DUMPING: WHAT SHOULD A DUMPEE THINK?

Domestic firms competing against exports dumped into their market are likely to complain loudly to their government, charging that this is unfair. How should the importing country view dumping? What should be its government policy toward dumping?

In one sense the importing country's view is easy. It should welcome dumping and thank the exporting country. After all, we do not usually argue when someone tries to sell us something at a low price. This instinct seems clearly correct for persistent dumping. Compared to the high price in the exporting country, the importing country gets the gains from additional trade at the low export price. The importing country's terms of trade are better. The benefits to consumers are larger than the losses to the import-competing producers. To see this, consider what will happen to the importing country if it imposes a tariff on the dumped imports, to force the tariff-inclusive price up to about the level in the exporting country. In Figure 10.1, the duty would be 140 percent (= [60 – 25]/25). In this example the tariff of 140 percent is prohibitive. The Japanese firm would cease all exports to the United States. The United States thus would lose all net gains from trade in this product. Although there would be an increase in the surplus of domestic producers when the prohibitive duty was imposed, the loss of domestic consumer surplus would be larger. Through similar logic, the importing country generally should welcome seasonal and introductory-price dumping.

However, the other two types of dumping may not be so simple. There is a sound economic reason for the importing country to view predatory dumping negatively. Although the importing country gains from low-priced imports in the short run, it will lose because of high-priced imports once the exporting firm succeeds in establishing its monopoly power.

A key question is how frequently foreign firms use predatory dumping. Predatory dumping of manufactured goods was widely alleged during the international chaos of the 1920s and 1930s. In truth, there is no clear evidence that widespread predatory dumping has been practiced, despite a rich folklore about it. *Predatory dumping is likely to be rare* in modern markets. An exporting firm considering predatory dumping must weigh the sure losses from low prices in the short run against the possible but uncertain profits in the more distant future. Even if the firm could drive out its current competitors in the importing country, it may expect that, once it raises prices, new firms, including new exporters from other countries, will enter as competitors. The predatory exporter would not be able to raise prices or to keep them high for very long. Recent research suggests that no more than 5 percent of all cases of alleged dumping in the United States, the European Union, Canada, and Mexico show even a moderate possibility for predation (and it is possible that none of these cases involves predation).

Cyclical dumping is the most complicated kind of dumping for the importing country. Most cyclical dumping is probably the normal working of well-functioning, competitive global product markets. When demand declines, the market price falls in the short run. A firm will continue to produce, sell, and even export some amount of the product, as long the revenue earned at least covers variable cost. This is exactly what we want to happen when there is a decline in demand. Production declines somewhat in many countries as the world price falls. There is an efficient global "sharing" of the decline in demand. Once the recession ends, demand, price, and global production will recover. (If instead too much production capacity continues to exist, then eventually there will need to be an efficient global sharing of capacity reduction before price can recover.)

The importing country may not be completely convinced that cyclical dumping is fair just because it is usually globally efficient. When demand declines by, say, 10 percent, which countries absorb how much of global reduction in output? Is it fair that the import-country firms have to reduce their output and suffer losses? In particular, if the decline in demand is a result of a national recession in the exporting country, why is it fair that the exporting country can "export some of its unemployment"?

As usual, it is not easy to answer the question of what is fair. The international sharing of recessions is one of the effects that comes with the general benefits of international trade. We can also recall the key lesson from Chapter 9—use the specificity rule. The real problem here is the concern about producer losses. For instance, if the key concern is about unemployed workers, the country should provide suitable unemployment insurance or adjustment assistance.

## ACTUAL ANTIDUMPING POLICIES: WHAT IS UNFAIR?

Our discussion suggests that dumping is often good for the country importing the dumped exports but that two types of dumping could be bad for the importing country. Predatory dumping can be bad if it is successful, but success is probably

rare. Cyclical dumping can sometimes unfairly harm the importing country, but much of the time it is probably the normal working of the competitive market. The implication is that the importing-country's government policy toward dumping (its antidumping policy) should examine each case and consider benefits and costs before imposing antidumping duties or other restrictions on dumped imports. In fact, actual government policies are not at all like this.

The WTO rules permit countries to retaliate against dumping, if the dumping injures domestic import-competing producers. Antidumping cases increased rapidly beginning in the 1970s. Prior to the late 1980s, the United States, the European Union, Canada, and Australia were the importing countries that accounted for over 90 percent of antidumping cases, and most countries had no antidumping policies. By 2001, at least 89 countries had antidumping policies in place. Since 1993, importing countries other than the "traditional four" account for more than half of all dumping complaints.

Figure 10.2 shows the importing countries that are the leading users of antidumping policies. The traditional four users (the United States, the European Union, Canada, and Australia) accounted for 84 percent of the world total of 261 new cases in 1989–1990. By 1999–2000, the world total had more than doubled, to 628 new cases, and the traditional four accounted for only 43 percent. India had no antidumping policy in 1990, but by 1999–2000 it was the top initiator of new cases. Similarly, the number of cases in Argentina and South Africa went from 0 to 69 and 37, respectively.

Worldwide, the countries whose exporters are most frequently charged with dumping are the United States, China, Japan, the European Union, Korea, Taiwan, and Brazil. The products most often involved are chemicals, steel and other metals, machinery, textiles and apparel, and electrical products.

Let's look more closely at U.S. antidumping policy. A case usually begins with a complaint from U.S. producers. The U.S. Department of Commerce examines whether dumping has actually occurred, and the U.S. International Trade Commission examines whether U.S. firms have been injured. In addition, negotiations may occur with foreign exporters. If they agree to raise prices or to limit their exports, then the case can be terminated or suspended. (This type of outcome has been common in cases involving steel and chemicals.)

The Department of Commerce usually finds some amount of dumping—the law and the procedures are biased to make showing dumping easy. In more than half of the cases, full average cost is the basis for calculating normal value. In cases that use average cost, obtaining and interpreting data on the costs incurred by foreign exporters are often difficult, so the Commerce Department has leeway in determining what normal value is. The injury standard is not strict, but injury is usually the key to the outcome of a case. If both dumping and injury are found, customs officials are instructed to levy an **antidumping duty**—an extra tariff equal to the discrepancy (the margin) between the actual export price and the normal value. More than half of the cases brought in the United States result in

**FIGURE 10.2** Top 10 Initiators of Antidumping Cases

| Importing Country | Number of Cases Initiated 1989-1990 | Number of Cases Initiated 1999-2000 | Average Antidumping Duty Imposed 1995-1999 | Antidumping Orders in Effect, 2001 | Average Age (in years) of Orders in Effect, in 2000 |
|---|---|---|---|---|---|
| India | 0 | 106 | 28* | 121 | 2 |
| European Union | 66 | 96 | 28 | 219 | 4 |
| United States | 58 | 94 | 48 | 241 | 8 |
| Argentina | 0 | 69 | 85 | 45 | 2 |
| Australia | 68 | 39 | 59 | 56 | 5 |
| Canada | 28 | 39 | 45 | 89 | 6 |
| South Africa | 0 | 37 | 45 | 109 | 3 |
| Brazil | 3 | 27 | 53 | 52 | 4 |
| Mexico | 18 | 18 | 59 | 66 | 5 |
| New Zealand | 2 | 14 | 52 | 11 | 6 |

*For 1990–1994; information for 1995–1999 not available.

Sources: P.K.M. Tharakan, "Is Antidumping Here to Stay?" *World Economy* 22, no. 2 (February 1999), pp. 179–206; Congressional Budget Office "Antidumping Action in the United States and around the World: An Update," CBO Paper, June 2001; World Trade Organization, "Report (2001) of the Committee on Antidumping Practices," G/L/495, October 31, 2001; World Trade Organization, "Antidumping: Antidumping Investigations by Reporting Party," www.wto.org/english/tratop_e/adp_e/adp_e.htm.

antidumping duties or an exporter agreement to restrain their export prices or volumes.

Recent research shows some clear patterns of effects from all this. Shortly after the complaint is filed, the prices of the exporters charged with dumping increase, probably to try to reduce the final dumping margin. Export quantities decrease, because of the higher price and because of the uncertainty about the outcome of the case. If antidumping duties are imposed, the export quantities decrease further, by an average of 70 percent, and often to zero (as we noted for the case shown in Figure 10.1). The exporter also has an incentive to raise its export price. The antidumping duties are reduced or eliminated if a subsequent review by the Department of Commerce finds less or no dumping.

A recent study of the overall effects of imposing antidumping duties concluded that the United States suffers a loss of well-being of nearly $4 billion per year. About half of that amount is deadweight loss (like areas $b + d$ in Figure 7.5 or Figure 8.3). The other half is the transfer to foreign exporters that raise their prices (like area $c$ in Figure 8.3). The net loss to the United States could be lower than this, because the study does not attempt to quantify the value of avoiding any harmful effects from predatory dumping (probably minimal) and cyclical dumping (hard to measure).

Under current antidumping policies in the United States and a growing number of other countries, we get the following results:

1. The procedure is biased toward finding dumping.
2. The injury test considers only harm to import-competing producers. There is no consideration of whether predation or some other source of harm to the country is involved. There is little or no consideration of the benefits to consumers of the low-priced imports.
3. Overall, the process is biased toward imposing antidumping duties, even though this usually lowers the well-being of the importing country. Antidumping duties also generally lower world welfare.

See the box "Antidumping in Action" for specific examples that illustrate these conclusions.

If an exporting country's government believes that an importing country's government violated the WTO's rules in deciding to impose an antidumping duty (or a countervailing duty against a subsidy, which we will discuss later in this chapter), it can complain to the WTO. By mid-2002, eight such complaints, including three about duties imposed by the U.S. government, had proceeded to decisions and efforts to implement them. In all eight cases the dispute resolution panels found errors by the importing countries, including using inappropriate procedures, determining dumping margins (or subsidy rates) in a manner inconsistent with WTO rules, and determining injury using incomplete information or biased analysis. In four cases the importing countries eventually revoked the duties, though sometimes only after further efforts by the importing countries to maintain the duties. In the other four cases the importing countries revised their analyses and maintained the duties, leading to renewed complaints by the affected exporting countries. While the WTO dispute settlement procedure can provide some guard against misuse of antidumping duties, the process is too slow to minimize the effects of such misuse.

Antidumping policy starts out sounding like it is about unfair exports. But a closer examination indicates that something else is going on. Antidumping policy has become a major way for import-competing producers in a growing number of countries to gain new protection against imports, with the usual deadweight costs to the world and to the importing country. As shown in Figure 10.2, the average antidumping duties imposed against foreign exporters are very high, much higher than most regular tariffs, so the deadweight losses can be large. And, as shown in Figure 10.2, the antidumping duties continue for years (the oldest U.S. antidumping duty still in effect in 2000 was 26 years old). There is also the cost of arguing the cases and gathering the data to prove or disprove dumping and injury. In addition, import-competing firms use the threat of a dumping complaint to prod exporters to raise their prices and restrain their competition—the harassment effect—even if no complaint is actually filed.

## PROPOSALS FOR REFORM

Although there are exceptions, the current practice of retaliation against dumping is usually bad for the world and for the importing country.[2] Yet this practice is fully consistent with current WTO rules. Reform of the WTO rules is an important item on the agenda for the current Doha Round of multilateral trade negotiations. Three possibilities for reform are discussed in the following paragraphs.

First, *antidumping actions could be limited to situations in which predatory dumping is plausible.* This reform would focus on the type of dumping that is most likely to be bad for the world and for the importing country. It would also align antidumping policy with antitrust policy (as it is called in the United States; it is called competition policy, antimonopoly policy, or similar names in other countries). Pro-competition policies usually forbid any predatory action to gain monopoly power. This reform would try to limit the scope of antidumping policy. However, the procedures in a country could still be biased toward finding both dumping and something potentially predatory about it.

Second, *the injury standard could be expanded to require that weight be given to consumers and users of the product.* This change would shift the discussion toward injury to net national well-being, not just injury to domestic import-competing producers. This reform would also try to limit the scope for antidumping actions in a general way rather than by focusing on one type of dumping.

This reform would also change an odd feature of current antidumping policy, that consumers will be substantially affected by dumping decisions but have no legal standing in the process. In fact, most antidumping actions involve intermediate goods like steel and chemicals. As we noted in Chapter 9, the buyers (like automobile firms) of these products are often well organized politically. They can be effective in opposing import protection on the intermediate products that they buy and use. Current dumping policies give import-competing producers of intermediate products an end run around this political battle. Reforming

[2] Here is an example in which retaliation against persistent dumping could bring gains to the whole world. If the "convicted" dumper ceases all price discrimination, continues to serve both markets with a single price that is not too high, and is rewarded by getting the duty removed, the world could end up better off from the temporary punitive use of the duty. The world is better off in the sense that output is redirected to the home-country buyers who valued the good more highly at the margin. One example of this kind of gain is the outcome of the U.S. dumping case against Korean consumer electronics producers, which led to a lowering of the high prices Korean consumers had been paying for these products.

Recall that this is only one of a number of possible outcomes, and the others are usually bad for the world. For instance, the dumpers may move their export-market production to the importing country at some extra expense of world resources. Or they might abandon the controversial foreign market as not worth the bother if it is spoiled by an antidumping duty. The issue of dumping is complex. The text gives the welfare results that seem most likely, however.

# Case Study Antidumping in Action

Dumping laws and antidumping procedures sound technical and boring. The firms that use antidumping complaints to get protection from imports like it that way. Nobody else is much interested in what's going on. Yet the stakes are large. Maybe we should follow the money—now that's more interesting.

Here are three examples of antidumping in real life. One sad moral of these tales is that any exporter that succeeds in building market share is at risk of being accused of dumping, and defense against this charge will be very difficult.

## A GAME OF CHICKEN

When it comes to chicken, Americans prefer white meat. South Africans prefer dark meat. Sounds like the basis for mutually beneficial trade. And it would be, if it weren't for those pesky dumping laws.

U.S. chicken producers noticed the differences in demand. They began exporting dark-meat chicken to South Africa. This created extra competition for South African chicken producers, but South African consumers gained more than local producers lost. That's the way trade works. In addition, U.S. chicken producers were happy. The price they received for their dark-meat exports was somewhat higher than the price that could get in the United States. This added to their profitability.

South African chicken producers scratched back. They charged U.S. producers with dumping by exporting dark-meat chicken at a price less than production cost. This is an ideal situation for a biased antidumping authority, because there is no one way to determine this production cost. (What comes first, the dark meat or the white?) In 2000, the South African government determined that the U.S. firm Tyson was dumping by a margin of 200 percent (its export price was only one-third of its estimated production cost) and Gold Kiss was dumping by an incredible 357 percent margin. Something is fowl in South Africa. Good-bye gains from trade.

## WHAT'S SO SUPER ABOUT SUPERCOMPUTERS?

In 1996 the Japanese company NEC won the contract to supply a supercomputer to a university consortium funded by the U.S. National Science Foundation, to be used for weather forecasting. This was the first-ever sale of a Japanese supercomputer to an agency of the U.S. government. It seemed to be a major setback for Cray Research, the major U.S. supercomputer maker. But Cray thought it saw unfair trade.

With encouragement from the U.S. Department of Commerce, Cray filed a dumping complaint. NEC guessed that it was not likely to win with the Department of Commerce also acting as the judge, and it refused to participate in the case. Based on information provided by Cray, the U.S. government imposed antidumping duties on NEC supercomputers at the super rate of 454 percent (and at the almost super rate of 173 percent for supercomputers from Fujitsu, the other major Japanese producer). With these antidumping duties in place, no one in the United States would be buying NEC or Fujitsu supercomputers.

Not so super for U.S. users of supercomputers. Or for anyone in the United States who wanted accurate weather forecasts. NEC supercomputers were simply the best in the world for this purpose.

There's one more twist in this wired tale. Hey, maybe it isn't dumping after all. In 2001, Cray was in financial trouble, and its technology was lagging. In exchange for a $25 million investment by NEC and a 10-year contract to be the exclusive distributor of NEC supercomputers in North America, Cray asked the Department of Commerce to end the antidumping duty.

## AMERICAN STEEL: THE KING OF ANTIDUMPING

If antidumping were like the Super Bowl, the American steel industry would be the winner. At the end of 2000, nearly half of all antidumping duties in effect in the United States were on steel products. As a comparison, steel accounts for about 5 percent of U.S. imports. How did one industry that employs about 200,000 workers become the king of antidumping?

In the first half of the 20th century, the American steel industry was the world leader in output and productivity. In 1950 the United States produced about half of the world's total steel output. Since then the situation has changed dramatically. Steel producers in other countries increasingly have sourced low-priced raw materials globally (for instance, iron ore from Australia and Brazil). These foreign firms focused on raising productivity and lowering costs. They often had support from their national governments. At the same time, the managers of the large integrated American steel producers made poor decisions, including lagging innovation of technological improvements and payment of uncompetitive high wages and benefits to unionized workers. By 2000, American steel firms accounted for only 12 percent of world production. Nearly half of U.S. production was by minimills, another source of competitive pressure on the large integrated American firms (often called Big Steel).

American steel firms fought back. A large part of their strategy was the use of political lobbying and U.S. trade laws to attack imports. In the 1980s, to head off a large number of steel dumping complaints, the U.S. government forced the European Union and other countries to impose voluntary export restraints (VERs). As these VERs ended, on one day in 1992 American steel firms filed 80 dumping complaints against 20 countries. (Note that American steel producers buy about one-quarter of all steel imported into the United States, in the form of raw steel slabs that they use to make finished steel products. Amazingly, raw steel slab is apparently never dumped into the United States, but all kinds of finished steel products are.)

American steel firms are well organized. Statisticians at steel-producer organizations and at individual steel firms closely examine each month's trade data. When they see an increase of imports in a specific steel product, the American firms are likely to file a dumping complaint. The American firms actually "lose" or withdraw at least half of these complaints. But they don't really lose. For instance, in 1993, American firms filed dumping complaints against exporters of carbon steel rod. In the early months of the investigation, the price of this product in the United States increased by about 25 percent. Eventually, the American firms lost the cases or withdrew the complaints. An executive of a foreign-owned steel firm commented, "But who says they lost? I would say they won. Whatever they spent in legal fees, they probably recouped 50 times in extra revenue. That is the great thing about filing: Even if you lose, you win."*

Another big set of dumping complaints arose in the aftermath of the Asian crisis that began in 1997. Demand collapsed in the crisis countries (especially Korea, Thailand, Indonesia, Malaysia, and the Philippines). A steel firm has substantial fixed costs in the short run. In the face of declining demand and prices it continues to produce and sell steel as long as the price is above average variable cost (which is much lower than full average cost).

*Mr. Nicholas Tolerico, executive vice president of Thyssen, Inc., a U.S. subsidiary of Thyssen AG, a German steel company. Quoted in the *Wall Street Journal,* March 7, 1998.

*—Continued on next page*

**Dumping Cases Involving Steel Products, Filed in the United States, 1998–1999**

| Product | Date Filed | Number of Countries | Dumping Margins | Injury? |
|---|---|---|---|---|
| Stainless steel plate-in-coils | 3/98 | 4 | 7–45% | Yes |
| Stainless steel round wire | 3/98 | 6 | 0-36 | No |
| Stainless steel sheet and strip | 6/98 | 8 | 0-59 | Yes |
| Hot-rolled steel | 9/98 | 3 | 18–185 | Yes |
| Cut-to-length steel plate | 2/99 | 8 | 0–72 | Yes (6), no (2) |
| Cold-rolled steel | 6/99 | 12 | 7–164 | No |
| Seamless pipe | 6/99 | 6 | 11–108 | Yes |
| Structural beams | 8/99 | 2 | 25–65 | Yes |
| Tin mill products | 10/99 | 1 | 32–95 | Yes |
| Circular stainless steel hollow products | 10/99 | 1 | 62–157 | Yes |

Steel firms that had been selling to the crisis countries tried to shift sales to other countries. In 1998 imports of finished steel into the United States rose rapidly. Imports went from about 20 percent of U.S. steel consumption in January to about 33 percent late in the year. During this time prices for steel products typically fell by 20 to 25 percent.

The global steel industry is competitive and highly cyclical. A strong case can be made that 1998 was a fairly typical down phase in the global cycle. Normal and competitive or not, American steel firms swung into action. The accompanying figure shows the steel dumping complaints filed in 1998 and 1999. (Half of these cases also charged some of the countries with receiving unfair government subsidies.)

We see several familiar patterns here. First, the Department of Commerce almost always finds dumping, and the margins are often surprisingly large. Second, the International Trade Commission does not always find injury. In the case of cold-rolled steel, the ITC ruled that any injury was mainly due to competition from American minimills and the decline in demand during a strike at General Motors. In addition, just filing the case is usually a win. For instance, in the months after the complaint was filed, imports of hot-rolled steel fell by more than 65 percent, imports of cut-to-length steel plate fell by 33 percent, and imports of cold-rolled steel (a case eventually "lost," as noted above) fell by 20 percent. Also, as a result of the hot-rolled steel case, in 1999 Russia agreed to VERs on a broad range of steel products, and Brazil agreed to a VER on hot-rolled steel.

By 2000, American steel firms had used the U.S. trade laws to roll back the import share of the American market for finished steel to 22 percent. And still the dumping complaints will keep on coming.

antidumping policy to include consumer interests would reopen the battle and probably reduce some of the bad use of antidumping policy.

Third, *antidumping policy could be replaced by more active use of safeguard policy,* another kind of increased import protection allowed by WTO rules. **Safeguard policy** is the use of temporary import protection when a sudden increase in imports causes injury to domestic producers. The intent is to give

some time for import-competing firms and their workers to adjust to the increased import competition (recall the discussion of adjustment assistance in Chapter 9).

Defenders of antidumping policy often state that antidumping policy facilitates trade liberalization, because it allows protection for industries that are hurt more than expected by increasing imports. This is really an argument for safeguard policy. Safeguard policy is better because:

- There is no need to show that foreign exporters have done anything unfair.
- The interests of consumers can be considered in the process that leads to the decision of whether or not to impose a safeguard, and what form it will take if imposed.
- The focus is on adjustment by the import-competing producers.
- There is pressure to adjust because the import protection is temporary.

Safeguard actions have not been much used in the United States. One famous case is Harley-Davidson in the 1980s. After a safeguard was imposed, Harley-Davidson came back so strongly and quickly in its battle with Japanese competitors (Suzuki and Honda) that it asked that the safeguard protection be removed earlier than scheduled. More recently, the tariffs on steel imposed by the U.S. government in 2002 (discussed in Chapter 1) were the outcome of the government's investigation of a request by American steel firms for safeguard relief. Clearly, safeguard actions such as these steel tariffs can still be highly controversial, but at least all parties affected have a right to be heard in the debate.

## EXPORT SUBSIDIES

Governments promote or subsidize exports more often than they restrict or tax exports.[3] Some government efforts to promote exports are not controversial according to international precepts (although there are questions about how effective they are). Government agencies like the Trade Information Center of the U.S. Department of Commerce provide foreign-market research, information on export procedures and foreign government regulations, and help with contacting buyers. Government agencies sponsor export promotion events like trade fairs and organized trips. Governments establish export processing zones that permit imports of materials and components with easier customs procedures and low or no tariffs.

Governments also provide various forms of financial assistance that benefit their exporters. These **export subsidies** are controversial because they violate international norms about fair trade. Our analysis of export subsidies will conclude that export subsidies are usually bad from a world point of view. However, the international division of gains and losses turns out to be very different from

[3] In the United States this is not surprising because the U.S. Constitution prohibits the taxing of exports.

what you would expect just by listening to who favors export subsidies and who complains about them. Export subsidies are bad for the countries that use them, but are good for the countries that complain about them!

Governments subsidize exports in many ways, some of them deliberately subtle to escape detection. They use taxpayers' money to give low-interest loans to exporters or their foreign customers. An example is the U.S. Export-Import Bank, or Eximbank. Founded in the 1930s, it has compromised its name by giving easy credit to U.S. exporters and their foreign customers but not to U.S. importers or their foreign suppliers. Governments also charge low prices on inputs (such as raw materials or domestic transport services) that go into production that will be exported. Income tax rules are also twisted to give tax relief based on the value of goods or services each firm exports.

Export subsidies are small on average, but they loom large in certain products and for certain companies. For instance, most Eximbank loans have been channeled toward a few large U.S. firms and their customers. Boeing, in particular, has been helped to extra foreign aircraft orders by cheap Eximbank credit. More broadly, the biggest export subsidies apply to agricultural products.

What are the effects on the country whose government offers the export subsidy? Let's examine the effects for a *competitive industry,* using our standard supply-and-demand framework. We will reach the following conclusions:

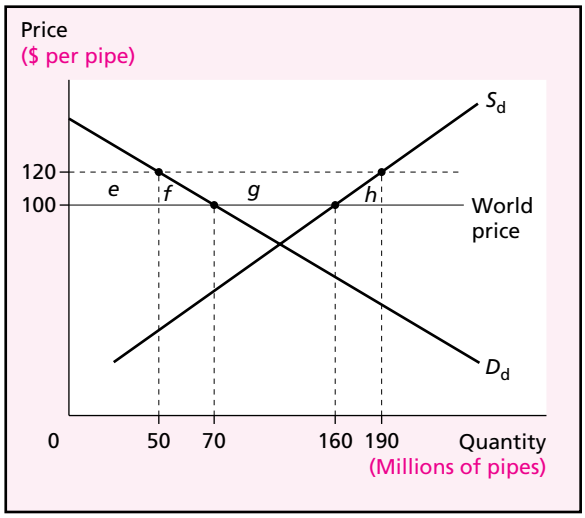
1. An export subsidy expands exports and production of the subsidized product. In fact, the export subsidy can switch the product from being imported to being exported.
2. An export subsidy lowers the price paid by foreign buyers, relative to the price that local consumers pay for the product. In addition, for the export subsidy to work as intended (the government subsidizes only exports, not domestic purchases), something must prevent local buyers from importing the product at the lower foreign price.
3. The export subsidy reduces the net national well-being of the exporting country.

Let's examine three cases to see the validity of these conclusions.

## Exportable Product, Small Exporting Country

Figure 10.3 shows a small country, in this case a country whose exports of steel pipes do not affect the world price of $100 per pipe (standard length). With free trade the firms in the country's competitive steel-pipe industry produce 160 million pipes per year and export 90 million (= 160 – 70). The government of this country then decides to offer to its firms an export subsidy of $20 per pipe. The revenue per pipe exported then is $120, equal to the $100 price paid by foreign buyers plus the $20 subsidy. If the pipe firm can get $120 for each pipe exported, it will not sell to any domestic buyer at a price lower than $120. Of course, this is only possible if domestic buyers cannot just buy imported pipes from the world market at $100. Something must keep the export market separate from the domestic market. (This should sound familiar—it sounds like persistent dumping. In

**FIGURE 10.3**
Export Subsidy, Small Country, Exportable Product




With free trade at the world price of $100, this small country exports 90 million steel pipes. If the country instead offers an export subsidy $20 per unit exported, revenue per unit exported rises to $120, and the exporting firms must receive this amount as the selling price from domestic buyers as well. Domestic production rises from 160 to 190 million, domestic consumption falls from 70 to 50 million, and the country exports 140 million pipes. Domestic producers gain surplus equal to area $e + f + g$, domestic consumers lose surplus equal to area $e + f$, and the cost to the government of paying the export subsidy is area $f + g + h$. The net loss in national well-being because of the export subsidy is area $f + h$.

fact, receiving an export subsidy is another reason why an exporting firm would engage in dumping.)

What are the other effects of the export subsidy in this case? If revenue per unit rises to $120 (for both export and local sales), the quantity produced increases to 190 million. If the domestic price increases to $120, local quantity demanded decreases to 50 million. Quantity exported increases to 140 million (= 190 – 50).

Who are the winners and losers in the exporting country? Producers gain surplus equal to areas $e + f + g$. Consumers lose surplus equal to area $e + f$. The cost to the government of paying the export subsidy is areas $f + g + h$, equal to the export subsidy of $20 per pipe times the 140 million pipes exported with the subsidy.

The export subsidy has increased exports and production of this product, but is it good for the exporting country? Using our one-dollar, one-vote metric, the answer is no. After we cancel out the matching gains and losses, the net loss in national well-being is areas $f$ and $h$. Area $f$ is the **consumption effect** of the export subsidy, the lost consumer surplus for those consumers squeezed out of the market when the domestic price rises above the world price. Area $h$ is the **production effect** of the export subsidy, the loss due to encouraging domestic production that has a resource cost greater than the world price (the world standard for efficient production). Although these two triangles are on the opposite sides of the graph, because this is an exportable product rather than an importable product, they are the same kinds of effects shown for the import tariff in Figure 7.4. The loss of national well-being for this small exporting country is also a loss for the world.

## Exportable Product, Large Exporting Country

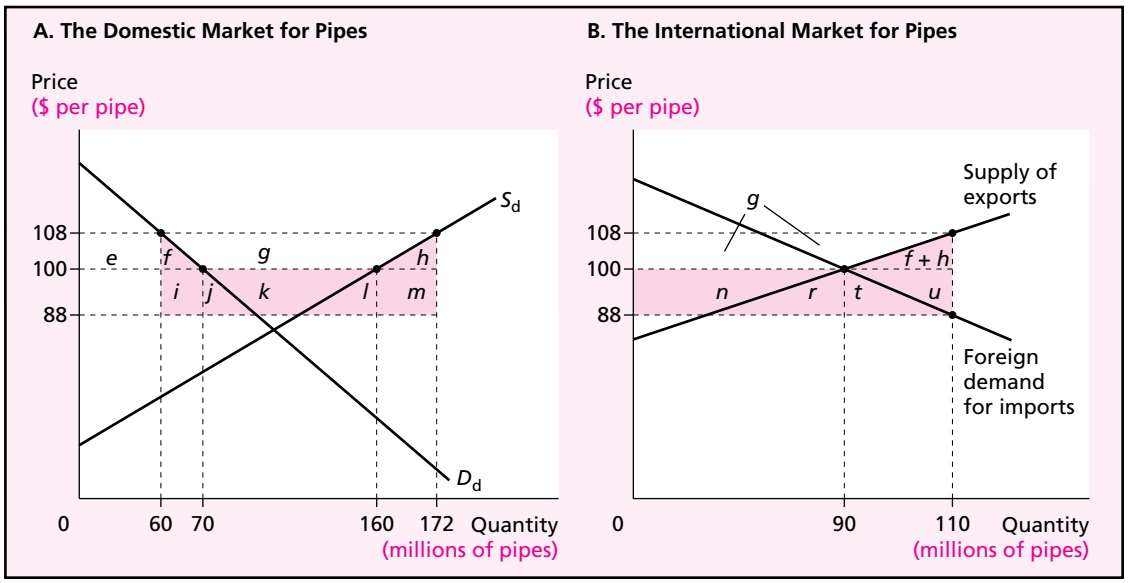
We've just seen that a small exporting country harms itself by offering an export subsidy to its competitive exporting industry. Perhaps the results are different if the exporting country is large enough to affect the world price. Not so—in fact, it may be worse.

Figure 10.4 shows this case. With free trade the world price is $100 per pipe. When the exporting-country government offers the export subsidy of $20 per pipe, exporting firms want to export more to get more of the subsidy. To get foreign consumers to buy more of the exported product, the exporting firms must lower the export price. And, just as in the small-country case, domestic buyers in the exporting country must end up paying $20 more than the export price (assuming that they cannot import from the rest of the world at the new world price).

We can see the resulting equilibrium more easily in panel B of Figure 10.4. The export subsidy creates a wedge of $20 between the price that foreign importers pay and the revenue per unit that exporters receive. This $20 wedge "fits" (vertically) at the quantity traded of 110 million pipes. The new world price is $88, the price paid by the importers. The revenue per unit to the exporting firms, and the new price in the exporting country, is $108.

Panel A of Figure 10.4 shows what is happening in the exporting country. At $108 per pipe, production in the exporting country increases from 160 million to 172 million, and domestic consumption decreases from 70 to 62 million. Quantity exported increases from 90 million to 110 million.

**FIGURE 10.4** Export Subsidy, Large Country, Exportable Product




With free trade at the world price of 100, this large country exports 90 million steel pipes. If instead the country offers an export subsidy of $20, its extra exports drive the world price down to $88. The revenue per unit received by the exporting firms is $108, and domestic buyers also pay a price of $108. The net loss of well-being for the exporting country is area $f + h + i + j + k + l + m$. The export subsidy both distorts domestic production and consumption and worsens the exporting country's international terms of trade. The inefficiency created for the world is area $f + h + u$.

As in the small-country case, the export subsidy has increased domestic production and exports of pipes. What are the effects on well-being in the exporting country? Producer surplus increases by area $e + f + g$. Consumer surplus falls by area $e + f$. The export subsidy costs the government \$20 times the 110 million units exported. This government cost of \$2.2 billion is area $f + g + h + i + j + k + l + m$ in Panel A (or area $f + g + h + n + r + t + u$ in Panel B).

The net loss to the exporting country is the shaded area in panel A or B. This net loss has three parts:

- The consumption effect (area $f$).
- The production effect (area $h$).
- The loss due to the decline in the exporting country's international terms of trade (area $i + j + k + l + m$ = area $n + r + t + u$).

The export subsidy gives a good bargain to foreign buyers. However, their gain is a loss to the exporting country from selling at a lower world price.

We can also use panel B to see the effect on world well-being. Area $n + r + t$ is increased surplus for the importing country. The net loss to the world is the triangular area $f + h + u$. This is the loss from too much trading of steel pipes.

## Switching an Importable Product into an Exportable Product

"If you throw enough money at something, it will happen." This adage applies to export subsidies. They can turn an importable product into one that is exported. Let's see how.

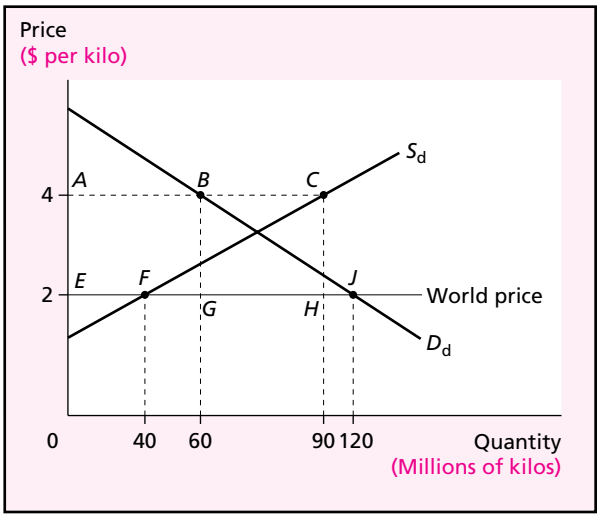
To keep things from getting too complicated, we will examine the small-country case shown in Figure 10.5. With free trade at the world price of \$2 per kilogram, the country would import 80 million kilos of butter (= 120 – 40). The government now offers an export subsidy of \$2 per kilo, and prevents domestic consumers from importing cheap foreign butter. The revenue per kilo exported now rises to \$4, and domestic production increases to 90 million kilos. At the higher domestic price of \$4 per kilo, domestic consumers reduce their butter purchases to 60 million kilos. With the export subsidy, the country is now an *exporter* of 30 million kilos.

The export subsidy switches an importable product into an exportable product. Domestic producers gain surplus of area *ACFE*. Domestic consumers lose surplus of area *ABJE*. The cost of the export subsidy to the government is area *BCHG*. The net loss of national well-being looks a bit peculiar, because the triangles of the consumption effect and the production effect overlap each other. The net national loss (and the net loss to the world) is area *BJG plus* area *CHF*.

This example of using export subsidies to create exportables is not farfetched! See the box "Agriculture Is Amazing."

At this point you might want to return to the conclusions stated at the beginning of this section. You should see that these conclusions apply to all three of our cases. If the market is competitive, an export subsidy is bad for the exporting country.

**FIGURE 10.5**
An Export Subsidy Turns an Importable Product Into an Export




With free trade and no export subsidy, this small country imports 80 million kilos of butter. If instead the country's government offers an export subsidy of $2 per kilo, the revenue per unit received by producers doubles to $4. The country becomes an exporter of 30 million kilos of butter. The net loss of national well-being is the sum of a production deadweight loss of area *FCH* and a consumption deadweight loss of area *BJG.*

## WTO RULES ON SUBSIDIES

As a result of the agreements reached in the Tokyo Round and Uruguay Round of trade negotiations, the WTO now has a clear set of rules for subsidies that may benefit exports.[4] The WTO rules divide subsidies into three types:

- Subsidies linked directly to exporting are *prohibited,* except export subsidies used by the lowest-income developing countries. Example: A firm receives a tax break based on the amount that it exports.
- Subsidies that are not linked directly to exporting but still have an impact on exports are *actionable.* Example: Low-priced electricity is provided to assist production by local firms in an industry, and some of this production is exported.
- Some subsidies are *nonactionable.* These include subsidies for research and development, assistance to disadvantaged regions, and assistance in meeting environmental regulations.

If an importing country's government believes that a foreign country is using a prohibited subsidy or an actionable subsidy that is harming its industry, the importing country can follow one of two procedures:

[4] A separate and less stringent set of rules applies to agricultural products. See the box "Agriculture Is Amazing."

- File a complaint with the WTO and use its dispute settlement procedure (used occasionally).
- Use a national procedure similar to that used for dumping (used more often).

If the importing country can show the existence of a prohibited or actionable subsidy and harm to its industry, it is permitted to impose a **countervailing duty,** a tariff used to offset the price or cost advantage created by the export subsidy.

## SHOULD THE IMPORTING COUNTRY IMPOSE COUNTERVAILING DUTIES?

How should the *importing country* respond to subsidized exports? Should the country simply enjoy the bargain? Or should the importing-country government heed the complaints from import-competing producers about unfair competition and impose a countervailing duty on the subsidized exports?

If the exporting country is large enough to affect world prices, then the export subsidy lowers the price that the importing country pays for these exports. As we saw in Figure 10.4B, the importing country overall is better off, but the import-competing industry is harmed. By WTO rules, the importing-country government is permitted to impose a countervailing duty. What happens if it does so?

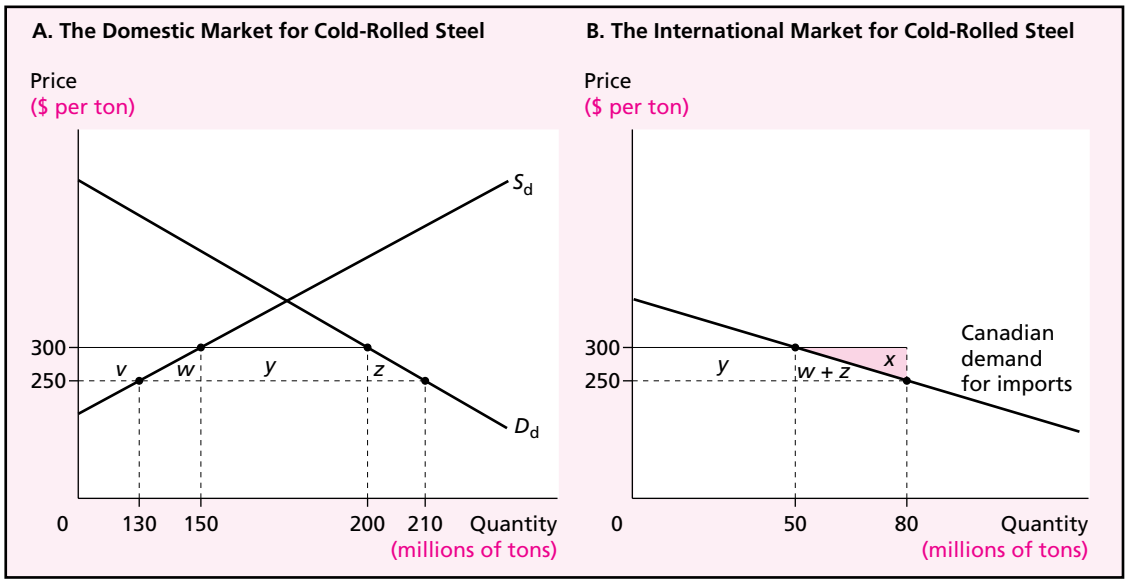
To keep things from getting too complicated, let's use an extreme version of the large-country case examined in Figure 10.4. In this version, all of the export subsidy is passed forward to the buyers of imports in the foreign country. That is, the price charged to importers falls by the full amount of the export subsidy. Still, be warned: Even this simplified case can be confusing. We will focus on two different measures of well-being, one for the importing country and one for the world. We will make comparisons among three different situations: (1) free trade, (2) export subsidy with no countervailing duty, and (3) export subsidy plus countervailing duty.

Figure 10.6 shows the Canadian and international market for cold-rolled steel. With free trade, Canada would import 50 million tons per year from Brazil at the free-trade price of $300 per ton. Then, the Brazilian government offers a subsidy of $50 per ton exported. If all of this is passed on to buyers, the export price declines to $250 per ton. Canadian imports increase to 80 million tons. Canadian production declines to 130 million tons, and Canadian producer surplus declines by area *v.* Canadian consumption increases to 210 million tons, and Canadian consumer surplus increases by area $v + w + y + z$. The net Canadian gain from the Brazilian export subsidy is area $w + y + z$. Still, Canadian producers are harmed, and they complain about the unfair competition.

For the world, this is too much steel trade. Steel tons that each cost $300 of Brazilian resources to produce are valued at less than $300 per ton by the Canadian buyer (as shown ton-by-ton on the Canadian demand-for-import curve).

What happens if the Canadian government imposes a countervailing duty of $50 per ton of imported steel? The duty-inclusive price of imports rises back to

**FIGURE 10.6** A Foreign Export Subsidy and a Countervailing Duty




The diagram shows the effect of (1) a Brazilian export subsidy on steel to Canada; and (2) a Canadian countervailing duty on imports of subsidized steel exports from Brazil. An odd pattern results: Each policy in turn brings a net loss to the country adopting it, yet for the world as a whole the Canadian countervailing duty undoes the harm done by the Brazilian export subsidy.

$300. In this subsidy-plus-countervailing-duty situation, the world returns to the same price $300 and volume of trade (50 million tons) as with free trade. This makes good sense for *world efficiency,* because the deadweight loss of excessive trade (area *x* in Figure 10.6B) is eliminated. For the world, the countervailing duty is a successful use of Chapter 9's specificity rule. In this case the world's problem is excessive exports of steel, and the countervailing duty directly affects exactly the problem activity.

Conclusions about the effects of the countervailing duty on *Canada's well-being* depend on what we compare to. *In comparison to the situation with the export subsidy and no countervailing duty,* Canada is worse off for imposing the countervailing duty. That's right—a countervailing duty in this case is bad for the country imposing it, but good for the whole world. We can use figure 10.6A to see the effect on the importing country of imposing the countervailing duty, given that an export subsidy exists. The duty-inclusive price rises to $300. Canadian producers gain area *v,* Canadian consumers lose area $v + w + y + z$, and the Canadian government collects area *y* as revenue from the countervailing duty. The net national loss to Canada of imposing the countervailing duty is area $w + z$ (the standard result for imposing a tariff).

Let's look at a second valid comparison, the *comparison between free trade and the combination of the export subsidy and countervailing duty.* In both of these situations, the price in Canada is the same ($300), as are all quantities. The

only difference is that the Canadian government is collecting revenue (area *y*) in the subsidy-and-duty situation. Who is effectively paying the countervailing duty? The Brazilian government! It pays the export subsidy to the Brazilian firms, who pass it on to import buyers in Canada through the lower export price. The Canadian import buyers then send it to the Canadian government when they pay the countervailing duty. The well-being of Canada is higher than it would be with free trade, because the Brazilian government is now effectively paying Canadian taxes.

Because export subsidies are bad for the world as a whole, and retaliating against them is good for the world as whole, WTO rules are wise to allow importing countries to impose countervailing duties. However, it turns out that subsidy complaints and countervailing duties are much less frequent than dumping complaints and antidumping duties. During 1999–2000 only 56 subsidy cases were initiated in the world, and in mid-2001 there were only 87 countervailing actions in effect.

The United States has been the largest user of countervailing duties, with 17 of these new cases and 43 of the countervailing duties in force. The European Union, Canada, and Australia also make some use of countervailing duties. India, Argentina, Taiwan, Indonesia, Thailand, and South Korea are the countries most frequently charged with subsidizing exports. Steel and textiles and clothing are the products most frequently involved. Countervailing duties also tend to be lower than antidumping duties. For instance, for the United States the average countervailing duty is about 10 percent.

While countervailing duties are often good for the world, they can also be misused in the same way that antidumping duties are misused. Import-competing producers have an incentive to complain about possible foreign subsidies to exports, in an effort to gain protection against these exports. Many activities of a government could have some element of subsidy in them. In antisubsidy cases, it is often possible for the complaining firms to establish that some kind of foreign subsidy exists that might benefit exports, perhaps with some help from a government process biased toward helping the import-competing domestic firms. Then, these firms can gain the protection of countervailing duties if they can show that they have been injured by the "subsidized" exports.

The softwood lumber dispute between the United States and Canada is an example of a controversial antisubsidy case. In early 2001 a VER limiting Canadian exports expired. U.S. lumber firms immediately renewed their complaint that Canadian lumber firms benefit from a subsidy because the Canadian government does not charge high enough fees for logging on government lands. The Canadian government contends that its fees are appropriate, so there is no subsidy. The U.S. government found otherwise. The U.S. Commerce Department concluded that the low fee was a subsidy of 19 percent, and concluded that Canadian lumber exporters also were dumping by an additional 8 percent on average. The U.S. International Trade Commission found injury to U.S. firms from the lumber imports that grew rapidly after the VER expired. U.S. lumber producers clearly gain surplus from the combined average duty of 27 percent against Canadian lumber. U.S. consumers lose. Most obviously, the cost of building a typical

## Case Study Agriculture Is Amazing

> I don't want to hear about agriculture from anybody but you . . . Come to think of it, I don't want to hear about it from you either.
>
> —President Kennedy to his top agricultural policy adviser

Agriculture is another world. Sometimes it seems as if the laws of nature have been repealed. Since the early 1980s the desert kingdom of Saudi Arabia has grown more wheat than it can consume, so it has exported wheat. Wheat is also exported by other countries with unfavorable soils and climates, including Great Britain and France. And crowded, mountainous Japan has often been a net exporter of rice.

All this happens because governments are more involved in agriculture than in any other sector of the private economy. In 2000 government policies in industrialized countries provided about $245 billion of support to farmers, equal to about 34 percent of the farmers' income. Government policies in the European Union (EU) provided $98 billion (38 percent of farm income), in the United States $49 billion (22 percent), and in Japan $60 billion (an amazing 64 percent of the income of Japanese farmers). The farmers' political lobbies in these countries are remarkably powerful, especially relative to the small role of agriculture in the economy (only about 2 percent of gross domestic product). Farmers producing rice, milk, and sugar are the biggest recipients of these subsidies.

About two-thirds of the increased farm income is provided through price supports. For the typical **price support,** the government sets a minimum domestic price for the agricultural product, and the government buys any amounts that farmers cannot sell into the market at the minimum (support) price. Domestic farmers receive at least the minimum price when they sell, and domestic consumers pay at least the minimum price when they buy. All of this sounds domestic—domestic minimum price, domestic farmers, domestic consumers. Yet something that starts "domestic" transforms itself on the way to the global markets.

The support price is almost always higher than the world price for the agricultural product. If the country would import the product with free trade, the price support requires that *imports be restricted.* Otherwise, cheap imports would flood into the country and undermine the price support. If the support price is not too high (less than or equal to the no-trade price for the country), then the price support is actually a form of import protection. The analysis of this type of price support mirrors that of import barriers presented in Chapters 7 and 8. Interesting, but not amazing yet.

If the country would export the product with free trade, but the support price is above the world price, then the country's farmers produce more than is purchased by domestic consumers. The government must buy the excess production at the high support price. The government could just destroy what it buys or let it rot, but that would be remarkably wasteful. The government could give it away to needy domestic families, but there are limits to how much can be given away before this free stuff starts to undermine regular domestic demand. The government could turn to the export market, which sounds like an excellent way to dispose of the excess national production. Perhaps it is, but the government will take a loss on each unit exported. This loss, the difference between the support price that the government pays and the lower world price that it receives, is an *export subsidy* from the government. Foreign buyers will not pay the high domestic support price; they buy only if the government offers a subsidized export price.

In this case, in which an exporting country sets a support price that is above the world price for the product, the price support policy is actually a combination of import protection and export subsidy. The analysis mirrors that accompanying Figures 10.3 and 10.4. We are getting closer to amazing.

Price supports can also *switch agricultural products from being importable to being exported.* Wheat is an example for Britain, France, and other EU members. Butter and other dairy products in the EU are other examples of products that have become exports because of generous price supports. With free trade, wheat, butter, and other dairy products would be imported into the EU because the world prices of these products are lower than the EU's no-trade prices. (More simply, the EU has a comparative disadvantage in these products.) The EU's support prices are so high that EU farmers produce much more than is sold in the EU. The EU uses export subsidies to export some its excess production. The analysis of this case mirrors that for Figure 10.6. Now that's pretty amazing. Domestic price supports morph into a combination of import protection and export subsidies that transform the country from an importer to an exporter of the products.

It takes a lot of government money to create amazement. The EU's Common Agricultural Policy (CAP) covers a broad range of agricultural products (including wheat, butter, and other dairy products). CAP spending represents about *half* of all EU fiscal expenditures. And the amazement brings a large national cost. The inefficiency of the CAP is equal to a loss of about 1 percent of the EU's gross domestic product.

Agriculture has also been another world for WTO rules. In contrast to the rules for industrial products, governments have been permitted to use import quotas and export subsidies. But things are changing. The agricultural provisions of the Uruguay Round trade agreement make agriculture less different, especially for developed countries. Governments are converting all quotas and other nontariff barriers into tariff rates, a process called *tariffication.* Each developed country is reducing its budget outlays for export subsidies by 36 percent and its volume of subsidized exports by 21 percent. Each developed country is supposed to reduce its domestic subsidies to agriculture by 20 percent, with some exceptions. The requirements for developing countries are less stringent.

The effects of these changes are not as large as one might expect. Most developed countries have maintained import protection through artful implementation of the agreement. Generally, highly protected products remain highly protected. The reduction of export subsidies is having some impact, especially in reducing subsidization of exports by the EU. The effects of the general reduction in domestic subsidies are moderate, because major subsidy programs in the United States and the EU were exempt from the cuts.

After the Uruguay Round agreement, agriculture is less different. Tariffication puts import barriers into a form in which they can be compared across countries, and the reduction in subsidies is a step toward less distorted markets. The agreement pulls agricultural products toward the mainstream of international trade rules. It lays the groundwork for future negotiations that may be able to achieve more substantial liberalizations. In this sector that would be amazing.

new home rises by over $1,000. Most new-home buyers can pay this, so they suffer a straight loss of money. The deadweight loss consumption effect occurs for the estimated 300,000 American families that cannot afford the higher house prices. Most of them have modest incomes, and they reluctantly remain in less desirable housing.

If the Canadian logging fee is a subsidy because it is too low, then world well-being is enhanced by the U.S. countervailing duty. However, if the Canadian fee is appropriate and not a subsidy, then the countervailing duty (and perhaps the antidumping duty as well) is simple import protection, with a net loss for the world. It is not an easy call for the referee of world efficiency.

## STRATEGIC EXPORT SUBSIDIES COULD BE GOOD

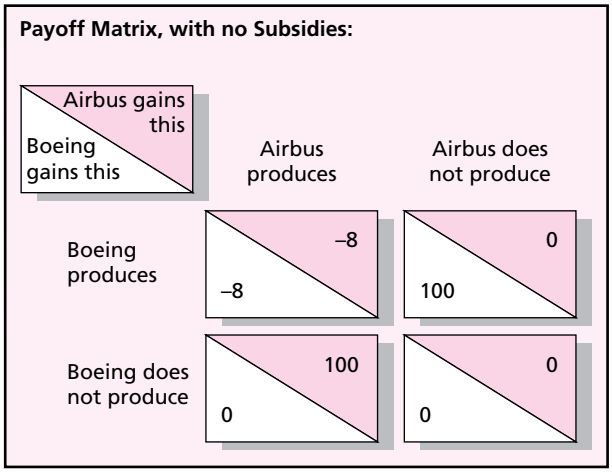
In the previous section we assumed competitive supply and demand, and we reached the conclusion that an export subsidy harmed the exporting country. For some industries this competitive assumption is wrong. Suppose instead that the real-world market in question features the clash of two giant firms, each of which could supply the whole market. The economics of an export subsidy looks very different if international competition in the industry consists of an oligopolistic duel between two giant firms for the global market. (Recall our discussion of oligopoly and trade in Chapter 6.) In this battle of giants, an export subsidy can be either good or bad, both for the exporting country and for the world.

To see the possibility of a good subsidy, let us imagine a simplified case inspired by the continuing real-world competition between Boeing and Europe's Airbus. Suppose that it becomes technologically possible for them to build a new kind of passenger plane, perhaps a superjumbo jet. To keep a clear focus on the key points, let us say that there is no inherent difference between Airbus and Boeing in the cost of making the new plane. Still, aircraft manufacture can benefit from economies of scale—as a firm expands its planned output, the cost of making another unit drops as output rises. Either firm is capable of supplying the whole world market at a low cost. If only one firm captures the whole world market, it will reap some monopoly profits. If both firms produce, they will vie for sales and drive the price down to their low variable costs. In this rivalry case, they make no operating profits.

Figure 10.7 sets the stage by considering what might happen if Airbus and Boeing simultaneously faced a decision about whether to make the new plane. For either of them, it is a tough decision. Let's look at it from Airbus's viewpoint. Should it choose to invest 8 and produce the new planes (left column), or should it not invest and not produce (right column)? Well, that all depends on what Boeing does. If Airbus could be sure Boeing would stay out, it should definitely invest the 8 and produce, making the profits of 100 shown in the lower left box. But what if Boeing does produce? Then the two of them will have a price war and get no operating profits to offset their initial investments of 8.

So choosing to enter the market looks risky for Airbus. It looks similarly risky for Boeing. As you can see by studying the payoffs for the two rows, Boeing

**FIGURE 10.7**
A Two-Firm Rivalry Game With no Government Subsidies: Airbus versus Boeing




When two competing firms face each other with identical choices and no government help, there is no clear result to the game if both must decide simultaneously. Each would like to be the only producer, but if both decide to produce, both lose. Knowing this, both may decide not to produce.

would want to produce only if it could be sure that Airbus won't produce (upper right box). But in a noncooperative game like this, neither firm can choose the outcome—each can only choose a strategy (column or row). The two firms might react to the threat of competition by producing nothing, leaving the world in the lower right box—with no new planes.

Either government could break through the uncertainty by offering a subsidy to its producer, for instance, a subsidy that covers the producer's initial costs. Again, let's take the European viewpoint. The governments of Britain, France, Germany, and Spain could agree (as they have in the past) to give subsidies to Airbus. If they give Airbus a start-up subsidy of 10, which more than covers its initial costs of 8, we could have the situation shown in panel A in Figure 10.8. Looking down the left column of possibilities, Airbus can see that it should definitely produce. Either it gains only 2 (invest 8, get 10 back in subsidies) in the face of competition from Boeing, or it gains a full 110 if Boeing is frightened off. Airbus gains, and the world's consumers gain (an amount not shown here). Even Europe as a whole gains if Airbus makes the 110 in profits, because after subtracting the subsidy of 10, the net gain to Europe is still 100. So here is a case of a subsidy that is good for the world as a whole, and good for the exporting country (the European Union) as well. This subsidy is a form of **strategic trade policy,** in which government policy helps its own firm's strategy to win the game and claim the prize (here, 100 of economic profit).[5]

[5] Another form of strategic trade policy is protection of the home market, if the home market is large and scale economies are important. The domestic firm can then use production to meet demand in its protected home market as the basis for low-cost production that allows it to compete aggressively in the foreign market. Aggressive exporting in this situation is sometimes called strategic dumping.

**FIGURE 10.8** A Two-Firm Rivalry Game With Government Subsidies: Airbus versus Boeing

**A. Payoff Matrix, with European Government Subsidies to Airbus**

| Boeing gains this \ Airbus gains this | Airbus produces | Airbus does not produce |
|---|---|---|
| Boeing produces | –8, 2 | 100, 0 |
| Boeing does not produce | 0, 110 | 0, 0 |

**B. Payoff Matrix, with Government Subsidies to Both Firms**

| Boeing gains this \ Airbus gains this | Airbus produces | Airbus does not produce |
|---|---|---|
| Boeing produces | 2, 2 | 110, 0 |
| Boeing does not produce | 0, 110 | 0, 0 |

**A.** If the European government gives Airbus a subsidy of 10, to ensure Airbus a profit of 2 even with full competition, Airbus will choose to produce. Knowing that Airbus will produce, Boeing will choose not to produce. Airbus wins profits of 110. Because the airplane is built, consumers gain some surplus from the new product, and the world as a whole gains well-being. **B.** In this case, with each government offering a subsidy to its firm of 10, both firms will produce the airplane. For each country the cost of the subsidy (10) is greater than the gain to the firm (2). Each country loses by offering its subsidy, unless gains in national consumer surplus (not pictured here ) are larger than this net loss of 8.

It's not so easy, though. Suppose that the U.S. government decides to subsidize Boeing's market entry in the same way that the EU subsidizes Airbus. Then we have the problem shown in panel B of Figure 10.8. Each firm sees a green light and decides to produce since each firm makes a positive profit regardless of whether or not the other produces. This is fine for the firms, but each government is spending 10. So *as nations,* the EU and the United States are each losing 8 (for each, this equals the 2 of profits that the firm shows minus the 10 of subsidy cost to the government). The only good news in panel B is hidden from view: The world's consumers gain. But if most of those consumers are outside the EU and the United States, these two nations are still net losers.

These simple examples bring out the two key points about an export subsidy or similar type of subsidy in a global duel between two exporting giants:

1. The subsidy *might* be a good thing for the exporting country, as shown in panel A in Figure 10.8, but
2. The case for giving the subsidy is fragile, depending on too many conditions to be a reliable policy.

In our example, we saw one condition that matters. If another national government also offers its firm strategic policy assistance, it is quite possible that both countries lose well-being. (Notice the similarity of this caveat to Chapter 7's discussion of the nationally optimal tariff and retaliation by the other country.) Another condition that matters is the possibility that there is no prize for the

game. For instance, there may not be enough consumer demand for the new product, so economic profits will be negative instead of positive, even if there is only one producer. How would the government separate the false pleas of some of its firms for strategic help from the valid ones? While there is a theoretical case for the national benefit of strategic trade policy, we may be skeptical that a national government could actually use it effectively.

## Summary

**Dumping** is selling exports at less than **normal value**—a price lower than the price in the home market or lower than the full average cost of production. Exporters may engage in dumping to drive foreign competitors out of business (**predatory dumping**), during recessions in industry demand (**cyclical dumping**), to unload excess inventory (**seasonal dumping**), or to increase profits through **price discrimination** (**persistent dumping**). The importing country benefits from the dumped exports because it pays a lower price for its imports. But the importing country could be hurt by predatory dumping (higher prices in the future) or by cyclical dumping (importing unemployment).

The WTO permits the importing country to retaliate with an **antidumping duty,** if dumping is occurring and it is causing injury to the import-competing industry. It appears that the process of imposing antidumping duties has become a major source of new protection for import-competing producers because the process is biased to find dumping and impose duties. The American steel industry is an example of a set of firms that continually complain about dumping to gain relief from import competition. Proposals for reform of antidumping policy include limiting its use to cases where predatory dumping is plausible, incorporating consumer interests in the analysis of injury from dumping, and replacing antidumping policy with more use of **safeguard policy,** in which a government offers temporary protection to assist an industry in adjusting to increasing import competition.

**Export subsidies** are condemned by the WTO, with the exception of export subsidies to agricultural products. If the market is competitive, an export subsidy brings a loss to the country offering the subsidy and to the world as a whole by causing excessive trade. A **countervailing duty** against subsidized exports brings a loss to the importing country levying it but brings a gain to the world as a whole by offsetting the export subsidy. The combination of an export subsidy and an equal countervailing duty would leave world welfare unchanged, with taxpayers of the export-subsidizing country implicitly making payments to the government of the importing country.

It is at least possible that export subsidies could be good for the exporting nation and for the world as a whole. If export competition takes the form of an oligopoly game between two giant producers, each of which could dominate the market alone (e.g., Boeing versus Airbus), then the government can offer a subsidy to its exporter as a **strategic trade policy.** This firm then may capture the global market and bring gains both to the exporting nation and to the world as a whole. We do not know that such a case has occurred, but it is possible.

## Suggested Reading

Niels (2000) provides a survey of a broad range of research on antidumping policy. Stiglitz (1997) provides a critique of U.S. antidumping and antisubsidy policies. Ethier (1982) presents the basic theory of dumping. Finger (1993), Hindley and Messerlin (1996), Prusa (1997), and the articles in Lawrence (1998) discuss actual antidumping policies. Galloway, Blonigen, and Flynn (1999) present estimates of the effects of U.S. antidumping and countervailing duties.

Krueger, Schiff, and Valdes (1992) offer a comparative international perspective on agricultural policies, and Gardner (1988) offers economic analysis of their effects on international trade. Hathaway and Ingco (1996) provide a summary and analysis of the agricultural agreement reached during the Uruguay Round.

Brander (1995) provides a technical survey of strategic trade policy. For a report on the role of government policy in the rise of new exporters in six industries, including steel and aircraft, see Lindert (2000).

## Questions and Problems

✦ 1. What are the two official definitions of *dumping?*

2. You have been asked to propose a specific revision of U.S. antidumping policy, to make the policy more likely to contribute to U.S. well-being. What will you propose?

✦ 3. Which of the following three beverage exporters is dumping in the U.S. market? Which is not? How do you know?

| | Banzai Brewery (Japan) | Tipper Laurie, Ltd. (UK) | Bigg Redd, Inc. (Canada) |
|---|---|---|---|
| Average unit cost | $10 | $10 | $10 |
| Price charged at the brewery for domestic sales | 10 | 12 | 9 |
| Price charged at the brewery for export sales | 11 | 11 | 9 |
| Price when delivered to the U.S. port | 12 | 13 | 10 |

4. What is a countervailing duty?

✦ 5. What would happen to world welfare if the United States paid exporters a subsidy of $5 for every pair of blue jeans they sold to Canada, but Canada charged a $5 countervailing duty on every pair imported into Canada? Would the United States gain from the combination of the export subsidy and import tariff? Would Canada? Explain.

6. Consider the case of an export subsidy for an importing country that has some monopsony power—that is, the case in which the foreign supply-of-exports curve is upward-sloping. Use a graph like that in Figure 10.4.
   *a.* In comparison with free trade, what is the effect of the export subsidy on the international price and the quantity traded?
   *b.* The importing country now imposes a countervailing duty that returns the market to the initial free-trade quantity traded. In comparison with the market with just the export subsidy, explain why the countervailing duty is good for the world. Explain why the countervailing duty can also increase the well-being of the importing country.

✦ 7. In the Airbus-versus-Boeing example in Figure 10.7, what strategy should the EU governments follow if the upper left box (*a*) gives Airbus and Boeing each a sure gain of 5 or (*b*) gives Boeing a gain of 5 and Airbus a gain of 0? In each case, should the EU offer a subsidy to Airbus? Explain.

8. Consider the export subsidy shown in Figure 10.3. Assuming that the export subsidy remains $20, what are the effects of a decline in the world price from $100 to $90? Show the effects using a graph and explain them.

✦ 9. You have been hired to write a defense of the idea of having a government plan and subsidize the expansion of an export-oriented industry, taking resources away from the rest of the economy in the short run. Describe how you would defend such an industrial targeting strategy as good for the nation as a whole.

10. You have been hired to discredit the argument you just presented in answering question 9. Present a strong case against getting the government into the export-pushing business.