CHAPTER 12

Controversies in Trade Policy

As we have seen, the theory of international trade policy, like the theory of international trade itself, has a long, intellectual tradition. Experienced international economists tend to have a cynical attitude toward people who come along with "new" issues in trade—the general feeling tending to be that most supposedly new concerns are simply old fallacies in new bottles.

Every once in a while, however, truly new issues do emerge. This chapter describes three controversies over international trade that have arisen over the past quarter-century, each raising issues that previously had not been seriously analyzed by international economists.

First, in the 1980s a new set of sophisticated arguments for government intervention in trade emerged in advanced countries. These arguments focused on the "high-technology" industries that came to prominence as a result of the rise of the silicon chip. While some of the arguments were closely related to the market failure analysis in Chapter 10, the new theory of **strategic trade policy** was based on different ideas and created a considerable stir. The dispute over high-technology industries and trade subsided for a while in the 1990s, but it has recently made a comeback as new concerns have emerged about U.S. innovation.

Second, in the 1990s a heated dispute arose over the effects of growing international trade on workers in developing countries—and whether trade agreements should include standards for wage rates and labor conditions. This dispute often widened into a broader debate about the effects of globalization; it was a debate played out not just in academic journals but also, in some cases, in the streets.

More recently, there has been growing concern about the intersection between environmental issues—which increasingly transcend national boundaries—and trade policy, with a serious economic and legal dispute about whether policies such as "carbon tariffs" are appropriate.

LEARNING GOALS

After reading this chapter, you will be able to:

- Summarize the more sophisticated arguments for interventionist trade policy, especially those related to externalities and economies of scale.
- Evaluate the claims of the anti-globalization movement related to trade effects on workers, labor standards, and the environment in light of the counterarguments.

- Discuss the role of the World Trade Organization (WTO) as a forum for resolving trade disputes and the tension between the rulings of the WTO and individual national interests.
- Discuss the key issues in the debate over trade policy and the environment.

Sophisticated Arguments for Activist Trade Policy

Nothing in the analytical framework developed in Chapters 9 and 10 rules out the desirability of government intervention in trade. That framework *does* show that activist government policy needs a specific kind of justification; namely, it must offset some preexisting domestic market failure. The problem with many arguments for activist trade policy is precisely that they do not link the case for government intervention to any particular failure of the assumptions on which the case for laissez-faire rests.

The difficulty with market failure arguments for intervention is being able to recognize a market failure when you see one. Economists studying industrial countries have identified two kinds of market failure that seem to be present and relevant to the trade policies of advanced countries. One of these is the inability of firms in high-technology industries to capture the benefits of that part of their contribution to knowledge that spills over to other firms. The other is the presence of monopoly profits in highly concentrated oligopolistic industries.

Technology and Externalities

The discussion of the infant industry argument in Chapter 11 noted that there is a potential market failure arising from difficulties of appropriating knowledge. If firms in an industry generate knowledge that other firms can use without paying for it, the industry is in effect producing some extra output—the marginal social benefit of the knowledge—that is not reflected in the incentives of firms. Where such **externalities** (benefits that accrue to parties other than the firms that produce them) can be shown to be important, there is a good case for subsidizing the industry.

At an abstract level, this argument is the same for the infant industries of less-developed countries as it is for the established industries of the advanced countries. In advanced countries, however, the argument has a special edge because in those countries, there are important high-technology industries in which the generation of knowledge is in many ways the central aspect of the enterprise. In high-technology industries, firms devote a great deal of their resources to improving technology, either by explicitly spending on research and development or by being willing to take initial losses on new products and processes to gain experience. Because such activities take place in nearly all industries, there is no sharp line between high-tech and the rest of the economy. There are clear differences in degree, however, and it makes sense to talk of a high-technology sector in which investment in knowledge is the key part of the business.

The point for activist trade policy is that while firms can appropriate some of the benefits of their own investment in knowledge (otherwise they would not be investing!), they usually cannot appropriate them fully. Some of the benefits accrue to other firms that can imitate the ideas and techniques of the leaders. In electronics, for example, it is not uncommon for firms to "reverse engineer" their rivals' designs, taking their products apart to figure out how they work and how they were made. Because patent laws provide only weak protection for innovators, one can reasonably presume that under laissez-faire, high-technology firms do not receive as strong an incentive to innovate as they should.

The Case for Government Support of High-Technology Industries Should the U.S. government subsidize high-technology industries? While there is a pretty good case for such a subsidy, we need to exercise some caution. Two questions in particular arise: First, can the government target the right industries or activities? Second, how important, quantitatively, would the gains be from such targeting?

Although high-technology industries probably produce extra social benefits because of the knowledge they generate, much of what goes on even in those industries has nothing to do with generating knowledge. There is no reason to subsidize the employment of capital or nontechnical workers in high-technology industries; on the other hand, innovation and technological spillovers happen to some extent even in industries that are not at all high-tech. A general principle is that trade and industrial policy should be targeted specifically on the activity in which the market failure occurs. Thus policy should seek to subsidize the generation of knowledge that firms cannot appropriate. The problem, however, is that it is not always easy to identify that knowledge generation; as we'll see shortly, industry practitioners often argue that focusing only on activities specifically labeled "research" is taking far too narrow a view of the problem.

The Rise, Fall, and Rise of High-Tech Worries Arguments that the United States in particular should have a deliberate policy of promoting high-technology industries and helping them compete against foreign rivals have a curious history. Such arguments gained widespread attention and popularity in the 1980s and early 1990s, then fell from favor, only to experience a strong revival in recent years.

The high-technology discussions of the 1980s and early 1990s were driven in large part by the rise of Japanese firms in some prominent high-tech sectors that had previously been dominated by U.S. producers. Most notably, between 1978 and 1986 the U.S. share of world production of dynamic random access memory chips—a key component of many electronic devices—plunged from about 70 percent to 20 percent, while Japan's share rose from under 30 percent to 75 percent. There was widespread concern that other high-technology products might suffer the same fate. But as described in the box on page 278, the fear that Japan's dominance of the semiconductor memory market would translate into a broader dominance of computers and related technologies proved to be unfounded. Furthermore, Japan's overall growth sputtered in the 1990s, while the United States surged into a renewed period of technological dominance, taking the lead in Internet applications and other information industries.

More recently, however, concerns about the status of U.S. high-technology industries have reemerged. A central factor in these concerns has been the decline in U.S. employment in the so-called ICT—information, communication, technology—industries, which are at the heart of the information technology revolution. As Figure 12-1 shows, the United States has moved into a large trade deficit in ICT goods, while as Figure 12-2 shows, U.S. employment in the production of computers and related goods has plunged since 2000, falling substantially faster than overall manufacturing employment.

Does this matter? The United States could, arguably, continue to be at the cutting edge of innovation in information technology while outsourcing much of the actual production of high-technology goods to factories overseas. However, as explained in the box on page 277, some influential voices warn that innovation can't thrive unless the innovators are close, physically and in business terms, to the people who turn those innovations into physical goods.

It's a difficult debate to settle, in large part because it's not at all clear how to put numbers to these concerns. It seems likely, however, that the debate over whether or not high-technology industries need special consideration will grow increasingly intense in the years ahead.

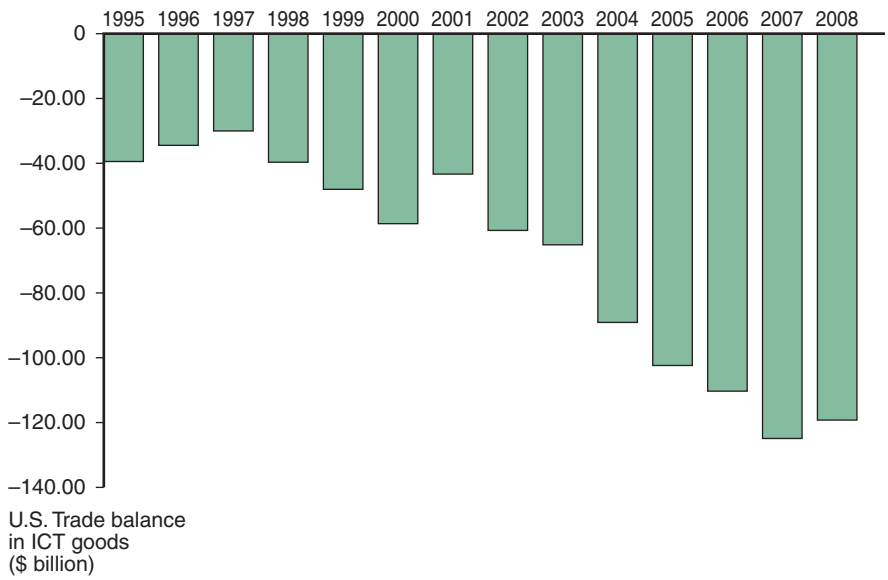


Figure 12-1

The U.S. Trade Balance in Information Goods

Since 2000, the United States has developed a large trade deficit in ICT—information, communications, technology—goods, which are widely seen as the cutting edge of innovation.

Source: National Science Foundation, *Science and Engineering Indicators* 2010.

Imperfect Competition and Strategic Trade Policy

During the 1980s a new argument for industrial targeting received substantial theoretical attention. Originally proposed by economists Barbara Spencer and James Brander of the University of British Columbia, this argument identifies the market failure that justifies government intervention as the lack of perfect competition. In some industries, they point out, there are only a few firms in effective competition. Because of the small number of firms, the assumptions of perfect competition do not apply. In particular, there will typically be **excess returns;** that is, firms will make profits above what equally risky investments elsewhere in the economy can earn. There will thus be an international competition over who gets these profits.

Spencer and Brander noticed that, in this case, it is possible in principle for a government to alter the rules of the game to shift these excess returns from foreign to domestic firms. In the simplest case, a subsidy to domestic firms, by deterring investment and production by foreign competitors, can raise the profits of domestic firms by more than the amount of the subsidy. Setting aside the effects on consumers—for example, when the firms are selling only in foreign markets—this capture of profits from foreign competitors would mean the subsidy raises national income at other countries' expense.

The Brander-Spencer Analysis: An Example The **Brander-Spencer analysis** can be illustrated with a simple example in which there are only two firms competing, each from a different country. Bearing in mind that any resemblance to actual events may be coincidental, let's call the firms Boeing and Airbus, and the countries the United States

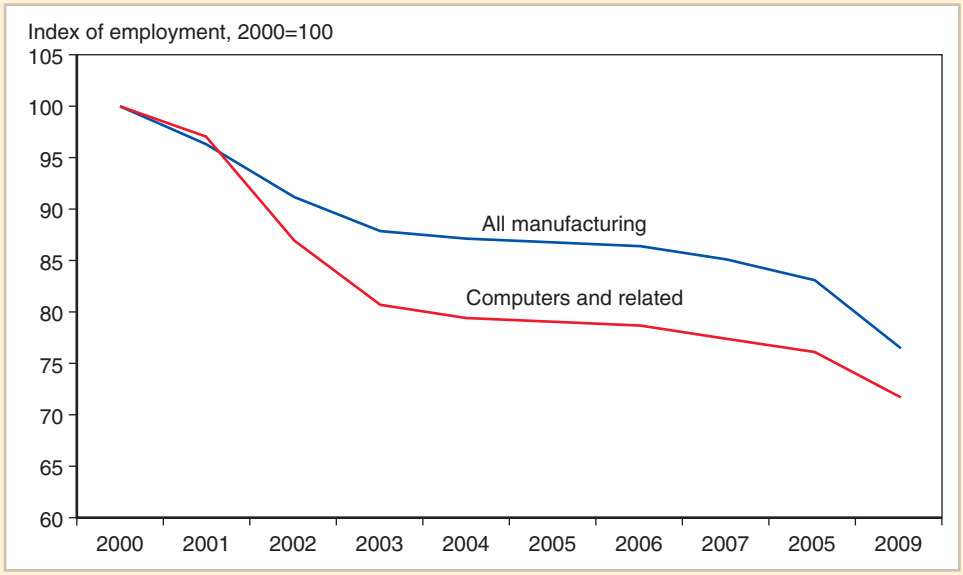


Figure 12-2

U.S. Manufacturing Employment

Since 2000, the number of workers producing computers and related goods in the United States has fallen sharply, outpacing the general decline in manufacturing employment.

Source: Bureau of Labor Statistics.

and Europe. Suppose there is a new product, a superjumbo aircraft, that both firms are capable of making. For simplicity, assume that each firm can make only a yes/no decision: either to produce superjumbo aircraft or not.

Table 12-1 illustrates how the profits earned by the two firms might depend on their decisions. (The setup is similar to the one we used to examine the interaction of different countries' trade policies in Chapter 10.) Each row corresponds to a particular decision by Boeing, each column to a decision by Airbus. In each box are two entries: The entry on the lower left represents the profits of Boeing, while that on the upper right represents the profits of Airbus.

As set up, the table reflects the following assumption: Either firm alone could earn profits making superjumbo aircraft, but if both firms try to produce them, both will incur losses. Which firm will actually get the profits? This depends on who gets there first.

TABLE 12-1 Two-Firm Competition

Boeing \ Airbus	*Produce*	*Don't produce*
Produce	–5 / –5	0 / 100
Don't produce	100 / 0	0 / 0

TABLE 12-2 Effects of a Subsidy to Airbus

Boeing \ Airbus	Produce	Don't produce
Produce	–5, 20	100, 0
Don't produce	0, 125	0, 0

Suppose Boeing is able to get a small head start and commits itself to produce superjumbo aircraft before Airbus can get going. Airbus will find that it has no incentive to enter. The outcome will be in the upper right of the table, with Boeing earning profits.

Now comes the Brander-Spencer point: The European government can reverse this situation. Suppose the European government commits itself to pay its firm a subsidy of 25 if it enters. The result will be to change the table of payoffs to that represented in Table 12-2. In this case, it will be profitable for Airbus to produce superjumbo aircraft whatever Boeing does.

Let's work through the implications of this shift. Boeing now knows that whatever it does, it will have to compete with Airbus and will therefore lose money if it chooses to produce. So now it is Boeing that will be deterred from entering. In effect, the government subsidy has removed the advantage of a head start that we assumed was Boeing's and has conferred it on Airbus instead.

The end result is that the equilibrium shifts from the upper right of Table 12-1 to the lower left of Table 12-2. Airbus ends up with profits of 125 instead of 0, profits that arise because of a government subsidy of only 25. That is, the subsidy raises profits by more than the amount of the subsidy itself, because of its deterrent effect on foreign competition. The subsidy has this effect because it creates an advantage for Airbus comparable with the *strategic* advantage Airbus would have had if it, not Boeing, had had a head start in the industry.

Problems with the Brander-Spencer Analysis This hypothetical example might seem to indicate that this strategic trade policy argument provides a compelling case for government activism. A subsidy by the European government sharply raises the profits of a European firm at the expense of its foreign rivals. Leaving aside the interest of consumers, this seems clearly to raise European welfare (and reduce U.S. welfare). Shouldn't the U.S. government put this argument into practice?

In fact, this strategic justification for trade policy, while it has attracted much interest, has also received much criticism. Critics argue that making practical use of the theory would require more information than is likely to be available, that such policies would risk foreign retaliation, and that in any case, the domestic politics of trade and industrial policy would prevent the use of such subtle analytical tools.

The problem of insufficient information has two aspects. The first is that even when looking at an industry in isolation, it may be difficult to fill in the entries in a table like Table 12-1 with any confidence. And if the government gets it wrong, a subsidy policy may turn out to be a costly misjudgment. Suppose, for example, that Boeing has some underlying advantage—maybe a better technology—so that even if Airbus enters, Boeing will still find it profitable to produce. Airbus, however, cannot produce profitably if Boeing enters.

In the absence of a subsidy, the outcome will be that Boeing produces and Airbus does not. Now suppose that, as in the previous case, the European government provides a subsidy

A Warning from Intel's Founder

When Andy Grove speaks about technology, people listen. In 1968 he co-founded Intel, which invented the microprocessor—the chip that drives your computer—and dominated the semiconductor business for decades.

So many people took notice in 2010 when Grove issued a stark warning about the fate of U.S. high technology: The erosion of manufacturing employment in technology industries, he argued, undermines the conditions for future innovation.* Grove wrote:

> Startups are a wonderful thing, but they cannot by themselves increase tech employment. Equally important is what comes after that mythical moment of creation in the garage, as technology goes from prototype to mass production. This is the phase where companies scale up. They work out design details, figure out how to make things affordably, build factories, and hire people by the thousands. Scaling is hard work but necessary to make innovation matter.
>
> The scaling process is no longer happening in the U.S. And as long as that's the case, plowing capital into young companies that build their factories elsewhere will continue to yield a bad return in terms of American jobs.

In effect, Grove was arguing that technological spillovers require more than researchers; they require the presence of large numbers of workers putting new ideas to work. If he's right, his assertion constitutes a strong argument for industrial targeting.

*Andy Grove, "How to Make an American Job Before It's Too Late," Bloomberg.com, July 1, 2010.

sufficient to induce Airbus to produce. In this case, however, because of Boeing's underlying advantage, the subsidy won't act as a deterrent to Boeing, and the profits of Airbus will fall short of the subsidy's value—in short, the policy will turn out to have been a costly mistake.

The point is that even though the two cases might look very similar, in one case a subsidy looks like a good idea, while in the other case it looks like a terrible idea. It seems that the desirability of strategic trade policies depends on an exact reading of the situation. This leads some economists to ask whether we are ever likely to have enough information to use the theory effectively.

The information requirement is complicated by the fact that we cannot consider industries in isolation. If one industry is subsidized, it will draw resources from other industries and lead to increases in their costs. Thus, even a policy that succeeds in giving U.S. firms a strategic advantage in one industry will tend to cause strategic disadvantage elsewhere. To ask whether the policy is justified, the U.S. government would need to weigh these offsetting effects. Even if the government has a precise understanding of one industry, this is not enough, because it also needs an equally precise understanding of those industries with which that industry competes for resources.

If a proposed strategic trade policy can overcome these criticisms, it still faces the problem of foreign retaliation, essentially the same problem faced when considering the use of a tariff to improve the terms of trade (Chapter 10). Strategic policies are **beggar-thy-neighbor policies** that increase our welfare at other countries' expense. These policies therefore risk a trade war that leaves everyone worse off. Few economists would advocate that the United States be the initiator of such policies. Instead, the furthest that most economists are willing to go is to argue that the United States should be prepared to retaliate when other countries appear to be using strategic policies aggressively.

Finally, can theories like this ever be used in a political context? We discussed this issue in Chapter 10, where the reasons for skepticism were placed in the context of a political skeptic's case for free trade.

Case Study

When the Chips Were Up

During the years when arguments about the effectiveness of strategic trade policy were at their height, advocates of a more interventionist trade policy on the part of the United States often claimed that Japan had prospered by deliberately promoting key industries. By the early 1990s, one example in particular—that of semiconductor chips—had become exhibit A in the case that promoting key industries "works." Indeed, when author James Fallows published a series of articles in 1994 attacking free trade ideology and alleging the superiority of Japanese-style interventionism, he began with a piece titled "The Parable of the Chips." By the end of the 1990s, however, the example of semiconductors had come to seem an object lesson in the pitfalls of activist trade policy.

A semiconductor chip is a small piece of silicon on which complex circuits have been etched. As we saw on page 277, the industry began in the United States when the U.S. firm Intel introduced the first microprocessor, the brains of a computer on a chip. Since then the industry has experienced rapid yet peculiarly predictable technological change: Roughly every 18 months, the number of circuits that can be etched on a chip doubles, a rule known as Moore's Law. This progress underlies much of the information technology revolution of the last three decades.

Japan broke into the semiconductor market in the late 1970s. The industry was definitely targeted by the Japanese government, which supported a research effort that helped build domestic technological capacity. The sums involved in this subsidy, however, were fairly small. The main component of Japan's activist trade policy, according to U.S. critics, was tacit protectionism. Although Japan had few formal tariffs or other barriers to imports, U.S. firms found that once Japan was able to manufacture a given type of semiconductor chip, few U.S. products were sold in that country. Critics alleged that there was a tacit understanding by Japanese firms in such industries as consumer electronics, in which Japan was already a leading producer, that they should buy domestic semiconductors, even if the price was higher or the quality lower than that for competing U.S. products. Was this assertion true? The facts of the case are in dispute to this day.

Observers also alleged that the protected Japanese market—if that was indeed what it was—indirectly promoted Japan's ability to export semiconductors. The argument went like this: Semiconductor production is characterized by a steep learning curve (recall the discussion of dynamic scale economies in Chapter 7). Guaranteed a large domestic market, Japanese semiconductor producers were certain that they would be able to work their way down the learning curve, which meant that they were willing to invest in new plants that could also produce for export.

It remains unclear to what extent these policies led to Japan's success in taking a large share of the semiconductor market. Some features of the Japanese industrial system may have given the country a "natural" comparative advantage in semiconductor production, where quality control is a crucial concern. During the 1970s and 1980s, Japanese factories developed a new approach to manufacturing based on, among other things, setting acceptable levels of defects much lower than those that had been standard in the United States.

In any case, by the mid-1980s Japan had surpassed the United States in sales of one type of semiconductor, which was widely regarded as crucial to industry success: random access memories, or RAMs. The argument that RAM production was the key to dominating the whole semiconductor industry rested on the belief that it would yield both strong technological externalities and excess returns. RAMs were the

largest-volume form of semiconductors; industry experts asserted that the know-how acquired in RAM production was essential to a nation's ability to keep up with advancing technology in other semiconductors, such as microprocessors. So it was widely predicted that Japan's dominance in RAMs would soon translate into dominance in the production of semiconductors generally—and that this supremacy, in turn, would give Japan an advantage in the production of many other goods that used semiconductors.

It was also widely believed that although the manufacture of RAMs had not been a highly profitable business before 1990, it would eventually become an industry characterized by excess returns. The reason was that the number of firms producing RAMs had steadily fallen: In each successive generation of chips, some producers had exited the sector, with no new entrants. Eventually, many observers thought, there would be only two or three highly profitable RAM producers left.

During the decade of the 1990s, however, both justifications for targeting RAMs—technological externalities and excess returns—apparently failed to materialize. On one side, Japan's lead in RAMs ultimately did not translate into an advantage in other types of semiconductors: For example, American firms retained a secure lead in microprocessors. On the other side, instead of continuing to shrink, the number of RAM producers began to rise again, with the main new entrants from South Korea and other newly industrializing economies. By the end of the 1990s, RAM production was regarded as a "commodity" business: Many people could make RAMs, and there was nothing especially strategic about the sector.

The important lesson seems to be how hard it is to select industries to promote. The semiconductor industry appeared, on its face, to have all the attributes of a sector suitable for activist trade policy. But in the end, it yielded neither strong externalities nor excess returns.

Globalization and Low-Wage Labor

It's a good bet that most of the clothing you are wearing as you read this came from a country far poorer than the United States. The rise of manufactured exports from developing countries has been one of the major shifts in the world economy over the last generation; even a desperately poor nation like Bangladesh, with a per-capita GDP less than 5 percent that of the United States, now relies more on exports of manufactured goods than on exports of traditional agricultural or mineral products. (A government official in a developing country remarked to one of the authors, "We are not a banana republic—we are a pajama republic.")

It should come as no surprise that the workers who produce manufactured goods for export in developing countries are paid very little by advanced-country standards—often less than $1 per hour, sometimes less than $0.50. After all, the workers have few good alternatives in such generally poor economies. Nor should it come as any surprise that the conditions of work are also very bad in many cases.

Should low wages and poor working conditions be a cause for concern? Many people think so. In the 1990s the anti-globalization movement attracted many adherents in advanced countries, especially on college campuses. Outrage over low wages and poor working conditions in developing-country export industries was a large part of the movement's appeal, although other concerns (discussed below) were also part of the story.

It's fair to say that most economists have viewed the anti-globalization movement as at best misguided. The standard analysis of comparative advantage suggests that trade is mutually beneficial to the countries that engage in it; it suggests, furthermore, that when labor-abundant countries export labor-intensive manufactured goods like clothing, not only should their national incomes rise but the distribution of income should also shift in favor of labor. But is the anti-globalization movement entirely off base?

The Anti-Globalization Movement

Before 1995 most complaints about international trade made by citizens of advanced countries targeted its effects on people who were also citizens of advanced countries. In the United States, most critics of free trade in the 1980s focused on the alleged threat of competition from Japan; in the early 1990s there was substantial concern in both the United States and Europe over the effects of imports from low-wage countries on the wages of less-skilled workers at home.

In the second half of the 1990s, however, a rapidly growing movement—drawing considerable support from college students—began stressing the alleged harm that world trade was doing to workers in the developing countries. Activists pointed to the low wages and poor working conditions in the third world factories that produced goods for Western markets. A crystallizing event was the discovery in 1996 that clothes sold at Wal-Mart, and endorsed by television personality Kathie Lee Gifford, were produced by very poorly paid workers in Honduras.

The anti-globalization movement grabbed world headlines in November 1999, when a major meeting of the World Trade Organization took place in Seattle. The purpose of the meeting was to start another trade round, following on the Uruguay Round described in Chapter 10. Thousands of activists converged on Seattle, motivated by the belief that the WTO was riding roughshod over national independence and imposing free trade ideas that hurt workers. Despite ample warnings, the police were ill prepared, and the demonstrations brought considerable disruption to the meetings. In any case, negotiations were not going well: Nations had failed to agree on an agenda in advance, and it soon became clear that there was not sufficient agreement on the direction of a new trade round to get one started.

In the end the meeting was regarded as a failure. Most experts on trade policy believe that the meeting would have failed even in the absence of the demonstrations, but the anti-globalization movement had achieved at least the appearance of disrupting an important international conference. Over the next two years, large demonstrations also rocked meetings of the International Monetary Fund and the World Bank in Washington, as well as a summit meeting of major economic powers in Genoa; at the latter event Italian police killed one activist.

In a relatively short period of time, in other words, the anti-globalization movement had become a highly visible presence. But what was the movement's goal—and was it right?

Trade and Wages Revisited

One strand of the opposition to globalization is familiar from the analysis in Chapter 3. Activists pointed to the very low wages earned by many workers in developing-country export industries. These critics argued that the low wages (and the associated poor working conditions) showed that, contrary to the claims of free trade advocates, globalization was not helping workers in developing countries.

For example, some activists pointed to the example of Mexico's *maquiladoras*, factories near the U.S. border that had expanded rapidly, roughly doubling in employment, in

the five years following the signing of the North American Free Trade Agreement. Wages in those factories were in some cases below $5 per day, and conditions were appalling by U.S. standards. Opponents of the free trade agreement argued that by making it easier for employers to replace high-wage workers in the United States with lower-paid workers in Mexico, the agreement had hurt labor on both sides of the border.

The standard economist's answer to this argument goes back to our analysis in Chapter 3 of the misconceptions about comparative advantage. We saw that it is a common misconception that trade must involve the exploitation of workers if they earn much lower wages than their counterparts in a richer country.

Table 12-3 repeats that analysis briefly. In this case we assume that there are two countries, the United States and Mexico, and two industries, high-tech and low-tech. We also assume that labor is the only factor of production, and that U.S. labor is more productive than Mexican labor in all industries. Specifically, it takes only one hour of U.S. labor to produce a unit of output in either industry; it takes two hours of Mexican labor to produce a unit of low-tech output and eight hours to produce a unit of high-tech output. The upper part of the table shows the real wages of workers in each country in terms of each good in the absence of trade: The real wage in each case is simply the quantity of each good that a worker could produce in one hour.

Now suppose that trade is opened. In the equilibrium after trade, the relative wage rates of U.S. and Mexican workers would be somewhere between the relative productivity of workers in the two industries—for example, U.S. wages might be four times Mexican wages. Thus it would be cheaper to produce low-tech goods in Mexico and high-tech goods in the United States.

A critic of globalization might look at this trading equilibrium and conclude that trade works against the interest of workers. First of all, in low-tech industries, highly paid jobs in the United States are replaced with lower-paid jobs in Mexico. Moreover, you could make a plausible case that the Mexican workers are underpaid: Although they are half as productive in low-tech manufacturing as the U.S. workers they replace, their wage rate is only 1/4 (not 1/2) that of U.S. workers.

But as shown in the lower half of Table 12-3, in this example the purchasing power of wages has actually increased in both countries. U.S. workers, all of whom are now employed in high-tech, can purchase more low-tech goods than before: two units per hour of work versus one. Mexican workers, all of whom are now employed in low-tech, find that they can purchase more high-tech goods with an hour's labor than before: 1/4 instead of 1/8 Because of trade, the price of each country's imported good in terms of that country's wage rate has fallen.

TABLE 12-3 Real Wages

(A) Before Trade

	High-Tech Goods/Hour	Low-Tech Goods/Hour
United States	1	1
Mexico	1/8	1/2

(B) After Trade

	High-Tech Goods/Hour	Low-Tech Goods/Hour
United States	1	2
Mexico	1/4	1/2

The point of this example is not to reproduce the real situation in any exact way; it is to show that the evidence usually cited as proof that globalization hurts workers in developing countries is exactly what you would expect to see even if the world were well described by a model that says that trade actually benefits workers in both advanced and developing countries.

One might argue that this model is misleading because it assumes that labor is the only factor of production. It is true that if one turns from the Ricardian model to the factor-proportions model discussed in Chapter 5, it becomes possible that trade hurts workers in the labor-scarce, high-wage country—that is, the United States in this example. But this does not help the claim that trade hurts workers in developing countries. On the contrary, the case for believing that trade is beneficial to workers in the low-wage country actually becomes stronger: Standard economic analysis says that while workers in a capital-abundant nation like the United States might be hurt by trade with a labor-abundant country like Mexico, the workers in the labor-abundant country should benefit from a shift in the distribution of income in their favor.

In the specific case of the *maquiladoras*, economists argue that while wages in the *maquiladoras* are very low compared with wages in the United States, that situation is inevitable because of the lack of other opportunities in Mexico, which has far lower overall productivity. And it follows that while wages and working conditions in the *maquiladoras* may appear terrible, they represent an improvement over the alternatives available in Mexico. Indeed, the rapid rise of employment in those factories indicated that workers preferred the jobs they could find there to the alternatives. (Many of the new workers in the *maquiladoras* are in fact peasants from remote and desperately poor areas of Mexico. One could say that they have moved from intense but invisible poverty to less severe but conspicuous poverty, simultaneously achieving an improvement in their lives and becoming a source of guilt for U.S. residents unaware of their former plight.)

The standard economist's argument, in other words, is that despite the low wages earned by workers in developing countries, those workers are better off than they would have been if globalization had not taken place. Some activists do not accept this argument—they maintain that increased trade makes workers in both advanced and developing countries worse off. It is hard, however, to find a clear statement of the channels through which this is supposed to happen. Perhaps the most popular argument is that capital is mobile internationally, while labor is not; and that this mobility gives capitalists a bargaining advantage. As we saw in Chapter 4, however, international factor mobility is similar in its effects to international trade.

Labor Standards and Trade Negotiations

Free trade proponents and anti-globalization activists may debate the big questions such as, is globalization good for workers or not? Narrower practical policy issues are at stake, however: whether and to what extent international trade agreements should also contain provisions aimed at improving wages and working conditions in poor countries.

The most modest proposals have come from economists who argue for a system that monitors wages and working conditions and makes the results of this monitoring available to consumers. Their argument is a version of the market failure analysis in Chapter 10. Suppose, they suggest, that consumers in advanced countries feel better about buying manufactured goods that they know were produced by decently paid workers. Then a system that allows these consumers to know, without expending large efforts on information gathering, whether the workers were indeed decently paid offers an opportunity for mutual

gain. (Kimberly Ann Elliott, cited in the Further Readings list at the end of the chapter, quotes a teenager: "Look, I don't have time to be some kind of major political activist every time I go to the mall. Just tell me what kinds of shoes are okay to buy, okay?") Because consumers can choose to buy only "certified" goods, they are better off because they feel better about their purchases. Meanwhile, workers in the certified factories gain a better standard of living than they otherwise would have had.

Proponents of such a system admit that it would not have a large impact on the standard of living in developing countries, mainly because it would affect only the wages of workers in export factories, who are a small minority of the work force even in highly export-oriented economies. But they argue that it would do some good and little harm.

A stronger step would be to include formal labor standards—that is, conditions that export industries are supposed to meet—as part of trade agreements. Such standards have considerable political support in advanced countries; indeed, President Bill Clinton spoke in favor of such standards at the disastrous Seattle meeting described above.

The economic argument in favor of labor standards in trade agreements is similar to the argument in favor of a minimum wage rate for domestic workers: While economic theory suggests that the minimum wage reduces the number of low-skill jobs available, some (though by no means all!) reasonable economists argue that such effects are small and are outweighed by the effect of the minimum wage in raising the income of the workers who remain employed.

Labor standards in trade, however, are strongly opposed by most developing countries, which believe that the standards would inevitably be used as a protectionist tool: Politicians in advanced countries would set standards at levels that developing countries could not meet, in effect pricing their goods out of world markets. A particular concern—in fact, it was one of the concerns that led to the collapse of the talks in Seattle—is that labor standards would be used as the basis for private lawsuits against foreign companies, similar to the way antidumping legislation has been used by private companies to harass foreign competitors.

Environmental and Cultural Issues

Complaints against globalization go beyond labor issues. Many critics argue that globalization is bad for the environment. It is unmistakably true that environmental standards in developing-country export industries are much lower than in advanced-country industries. It is also true that in a number of cases, substantial environmental damage has been and is being done in order to provide goods to advanced-country markets. A notable example is the heavy logging of Southeast Asian forests carried out to produce forest products for sale to Japanese and Western markets.

On the other hand, there are at least as many cases of environmental damage that has occurred in the name of "inward-looking" policies of countries reluctant to integrate with the global economy. A notable example is the destruction of many square miles of rain forest in Brazil, the consequence partly of a domestic policy that subsidizes development in the interior. This policy has nothing to do with exports and in fact began during the years that Brazil was attempting to pursue inward-looking development.

As in the case of labor standards, there is debate over whether trade agreements should include environmental standards. On one side, proponents argue that such agreements can lead to at least modest improvements in the environment, benefiting all concerned. On the other side, opponents insist that attaching environmental standards to trade agreements will in effect shut down potential export industries in poor countries, which cannot afford to maintain anything like Western standards.

An even trickier issue involves the effect of globalization on local and national cultures. It is unmistakably true that the growing integration of markets has led to a homogenization of cultures around the world. People worldwide increasingly tend to wear the same clothing, eat the same food, listen to the same music, and watch the same films and TV shows.

Much but not all of this homogenization is also Americanization. For example, McDonald's is now found almost everywhere; but so is sushi. Hollywood action films dominate the global box office; but the stylized fight scenes in Hollywood blockbusters like *The Matrix* are based on the conventions of Hong Kong martial arts films.

It is hard to deny that something is lost as a result of this cultural homogenization. One can therefore make a market failure argument on behalf of policies that attempt to preserve national cultural differences by, for example, limiting the number of American films that can be shown in theaters, or the fraction of TV time that can be taken up with programming from overseas.

As soon as one advances this argument, however, it becomes clear that there is another principle involved: the right of individuals in free societies to entertain themselves as they like. How would you feel if someone denied you the right to listen to the Rolling Stones or watch Jackie Chan movies, on the grounds that American cultural independence must be safeguarded?

The WTO and National Independence

One recurrent theme in the anti-globalization movement is that the drive for free trade and free flow of capital has undermined national sovereignty. In the extreme versions of this complaint, the World Trade Organization is characterized as a supranational power able to prevent national governments from pursuing policies in their own interests. How much substance is there to this charge?

The short answer is that the WTO does not look anything like a world government; its authority is basically limited to that of requiring countries to live up to their international trade agreements. However, the small grain of truth in the view of the WTO as a supranational authority is that its mandate allows it to monitor not only the traditional instruments of trade policy—tariffs, export subsidies, and quantitative restrictions—but also domestic policies that are de facto trade policies. And since the line between legitimate domestic policies and de facto protectionism is fuzzy, there have been cases in which the WTO has seemed to some observers to be interfering in domestic policy.

On page 241 we described a well-known example that illustrates the ambiguity of the issue. As we saw, the United States amended its Clean Air Act to require imported gasoline to be no more polluting than the average of gasoline supplied by domestic refineries. The WTO ruled that this requirement was a violation of existing trade agreements. To critics of the WTO, this ruling exemplified how the institution could frustrate an attempt by a democratically elected government to improve the environment.

As defenders of the WTO pointed out, however, the ruling was based on the fact that the United States was applying different standards to imports and to domestic production. After all, some U.S. refineries supply gasoline that is more polluting than the average, yet they are allowed to remain in operation. So the rule in effect prevented the sale of polluting gasoline from Venezuela in U.S. markets but permitted the sale of equally polluting gasoline from a domestic refinery. If the new rule had applied the same standards to domestic and foreign gasoline, it would have been acceptable to the WTO.

Case Study

Bare Feet, Hot Metal, and Globalization

"New York manhole covers, forged barefoot in India." That was the headline on a *New York Times* report published on November 26, 2007. Accompanying the story was a striking photo of barefoot, bare-chested men holding ladles of glowing, molten metal.

The story illustrated in particularly stark form the dilemmas and moral ambiguities of the debate over globalization.

It turns out that many of the manhole covers purchased by Con Edison, New York's power company, are produced by Shakti Industries, a foundry in the Indian province of West Bengal, and that Shakti's employees work under primitive conditions. Shoeless men, often stripped to the waist, catch molten iron as it emerges from a furnace, then pour it into molds.

Although the firm's director claimed that the factory never has accidents, the risks are obvious. Here's how the *Times* described the scene:

"Often, sparks flew from pots of the molten metal. In one instance they ignited a worker's lungi, a skirtlike cloth wrap that is common men's wear in India. He quickly, reflexively, doused the flames by rubbing the burning part of the cloth against the rest of it with his hand, then continued to cart the metal to a nearby mold."

The workers aren't paid much for taking these risks. The *Times* stated: "Workers at foundries in India are paid the equivalent of a few dollars a day, while foundry workers in the United States earn about $25 an hour."

The immediate reaction of some *Times* readers to this story was outrage. One letter writer demanded that the city ensure that it "buys products made under humane conditions." For its part, Con Edison said that it would rewrite its contracts to require that overseas manufacturers "take appropriate actions to maintain a safe and healthy workplace."

But was all this outrage actually doing the barefoot workers of West Bengal a favor? Another letter writer warned that it was actually counterproductive:

"American foundry workers enjoy a much higher standard of living than their Indian counterparts. They get paid much more, and their safety standards are (and should be) correspondingly higher. . . . To enforce similar standards in India would mean spending more on safety than is spent hiring the people themselves! . . . This unrealistic business model would lead to the closing of Indian foundry shops and loss of jobs for the poor people who need them most. . . . Of course safety is important, but such idealistic proposals will ultimately harm those whose safety they advocate."

Indeed, although the manhole cover producers of Shakti earn low wages for dangerous work by U.S. standards, their pay is good by Indian standards. And as the *Times* reported, "The men making New York City's manhole covers seemed proud of their work and pleased to be photographed doing it."

So is the production of manhole covers by barefoot workers something to be condemned or praised? Are demands for higher safety standards humane, or would they have the effect of denying desperately poor people of job opportunities, merely to satisfy our own fastidiousness?

Globalization and the Environment

Concerns about human impacts on the environment are growing in much of the world. In turn, these concerns are playing a growing role in domestic politics. For example, in November 2007, the government of Australian Prime Minister John Howard was voted out of office; most political analysts believed that the ruling party's decisive defeat had a lot to do with public perceptions that Australia's Liberal Party (which is actually conservative—Labor is on the left) was unwilling to act against environmental threats.

Inevitably, then, environmental issues are playing a growing role in disputes about international trade as well. Some anti-globalization activists claim that growing international trade automatically harms the environment; some also claim that international trade agreements—and the role of the World Trade Organization in particular—have the effect of blocking environmental action. Most international economists view the first claim as simplistic and disagree with the second. That is, they deny that there is a simple relationship between globalization and environmental damage, and do not believe that trade agreements prevent countries from having enlightened environmental policies. Nonetheless, the intersection of trade and the environment does raise a number of important issues.

Globalization, Growth, and Pollution

Both production and consumption often lead, as a byproduct, to environmental damage. Factories emit pollution into the air and sometimes dump effluent into rivers; farmers use fertilizer and pesticides that end up in water; consumers drive pollution-emitting cars. As a result—other things equal—economic growth, which increases both production and consumption, leads to greater environmental damage.

However, other things are not equal. For one thing, countries change the mix of their production and consumption as they grow richer, to some extent in ways that tend to reduce the environmental impact. For example, as the U.S. economy becomes increasingly devoted to the production of services rather than goods, it tends to use less energy and raw material per dollar of GDP.

Also, growing wealth tends to lead to growing political demands for environmental quality. As a result, rich countries generally impose stricter regulations to ensure clean air and water than poorer countries—a difference that is apparent to anyone who has gone back and forth between a major city in the United States or Europe and one in a developing country, and taken a deep breath in both places.

In the early 1990s, Princeton economists Gene Grossman and Alan Krueger, studying the relationship between national income levels and pollutants such as sulfur dioxide, found that these offsetting effects of economic growth lead to a distinctive "inverted U" relationship between per-capita income and environmental damage known as the **environmental Kuznets curve**.[1] This concept, whose relevance has been confirmed by a great deal of further research, is illustrated schematically in Figure 12-3.

The idea is that as a country's income per capita rises due to economic growth, the initial effect is growing damage to the environment. Thus, China, whose economy has surged in recent decades, is in effect moving from point A to point B: As the country burns more coal in its power plants and produces more goods in its factories, it emits more sulfur dioxide into the air and dumps more effluent into its rivers.

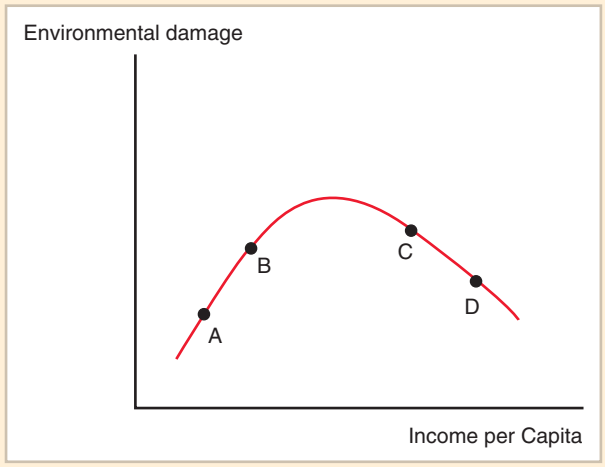
But when a country gets sufficiently rich, it can afford to take action to protect the environment. As the United States has grown richer in recent decades, it has also moved to

[1] Gene Grossman and Alan Krueger, "Environmental Effects of a North American Free Trade Agreement," in Peter Garber, ed., *The U.S. Mexico Free Trade Agreement*. MIT Press, 1994.

Figure 12-3

The Environmental Kuznets Curve

Empirical evidence suggests that as economies grow, they initially do increasing environmental damage—but they become more environmentally friendly once they become sufficiently rich. China, where the environment is deteriorating as the economy expands, is in effect moving from A to B. Richer countries may be moving from C to D, using some of their growth to improve the environment.



limit pollution. For example, cars are required to have catalytic converters that reduce smog, and a government-licensing scheme limits emissions of sulfur dioxide from power plants. In terms of Figure 12-3, the United States has on some fronts, such as local air pollution, moved from C to D: growing richer and doing less damage to the environment.

What does this have to do with international trade? Trade liberalization is often advocated on the grounds that it will promote economic growth. To the extent that it succeeds in accomplishing this end, it will raise per-capita income. Will this improve or worsen environmental quality? It depends which side of the environmental Kuznets curve an economy is on. In their original paper, which was in part a response to critics of the North American Free Trade Agreement who argued that the agreement would be environmentally harmful, Grossman and Krueger suggested that Mexico might be on the right side of the curve—that is, to the extent that NAFTA raises Mexican income, it might actually lead to a reduction in environmental damage.

However, the environmental Kuznets curve does not, by any means, necessarily imply that globalization is good for the environment. In fact, it's fairly easy to make the argument that at a world level, globalization has indeed harmed the environment—at least so far.

This argument would run as follows: The biggest single beneficiary of globalization has arguably been China, whose export-led economy has experienced incredible growth since 1980. Meanwhile, the single biggest environmental issue is surely climate change: There is broad scientific consensus that emissions of carbon dioxide and other greenhouse gases are leading to a rise in the Earth's average temperature.

China's boom has been associated with a huge increase in its emissions of carbon dioxide. Figure 12-4 shows carbon dioxide emissions of the United States, Europe, and China from 1980 to 2008. In 1980 China was a minor factor in global warming; by 2008 it was, by a substantial margin, the world's leading emitter of greenhouse gases.

It's important to realize, though, that the problem here isn't globalization per se—it's China's economic success, which has to some extent come as a result of globalization. And despite environmental concerns, it's difficult to argue that China's growth, which has raised hundreds of millions of people out of dire poverty, is a bad thing.

The Problem of "Pollution Havens"

When ships get too old to continue operating, they are disassembled to recover their scrap metal and other materials. One way to look at "shipbreaking" is that it is a form of

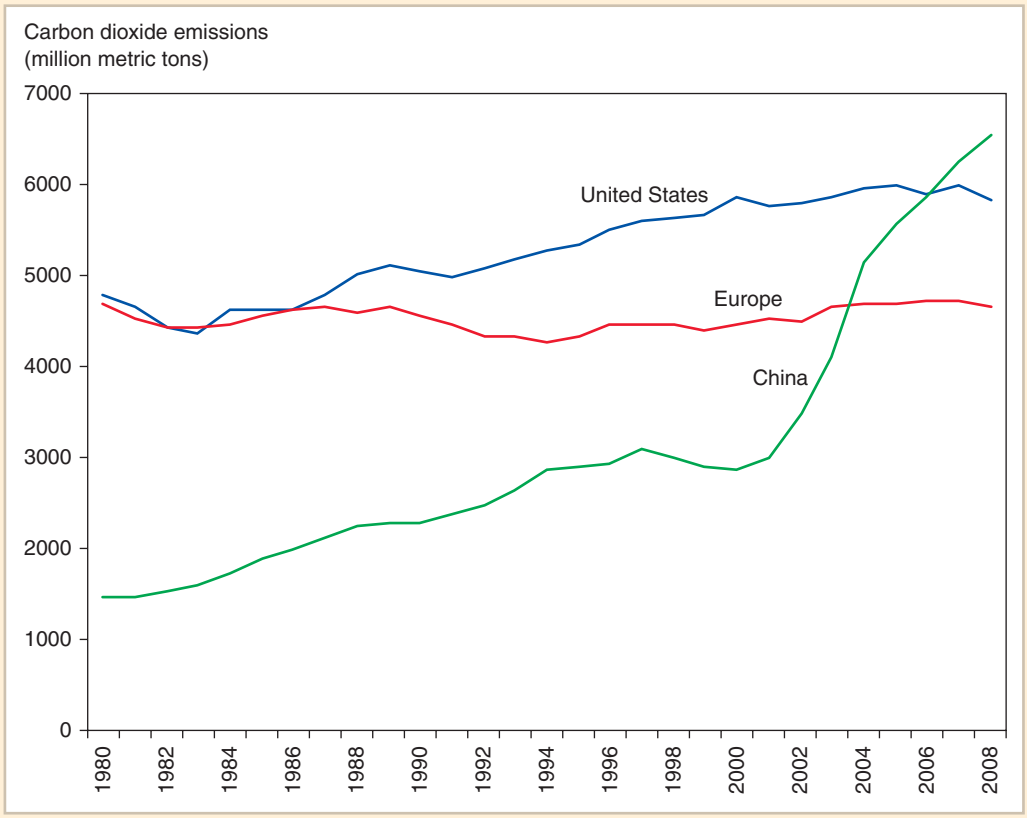


Figure 12-4

Carbon Dioxide Emissions

The rapid economic growth of China has turned it from a minor factor in climate change to the world's largest emitter of carbon dioxide.

Source: Energy Information Agency.

recycling: Instead of leaving a ship to rust, a shipbreaking firm extracts and reuses its components. Ultimately, this salvaging means that less iron ore needs to be mined, less oil extracted, and so on. One might expect shipbreaking to be good for the environment. The task itself, however, can be environmentally hazardous: Everything from the residual oil in a ship's tanks to the plastic in its chairs and interior fittings, if not handled carefully, can be toxic to the local environment.

As a result, shipbreaking in advanced countries is subject to close environmental regulation. When a ship is taken apart in Baltimore or Rotterdam, great care is taken to avoid environmental harm.

But these days, shipbreaking rarely takes place in advanced countries. Instead, it's done in places like the Indian shipbreaking center of Alang, where ships are run aground on a beach and then are dismantled by men with blowtorches, who leave a lot of pollution in their wake.

In effect, Alang has become a **pollution haven:** Thanks to international trade, an economic activity that is subject to strong environmental controls in some countries can take place in other countries with less strict regulation.

Some activist groups are very concerned about the problem of pollution havens. Indeed, the environmental group Greenpeace made a *cause celebre* out of Alang, demanding that higher environmental standards be imposed.

There are really two questions about pollution havens. The first is whether they are really an important factor. The second is whether they deserve to be a subject of international negotiation.

On the first question, most empirical research suggests that the pollution haven effect on international trade is relatively small. That is, there is not much evidence that "dirty" industries move to countries with lax environmental regulation.[2] Even in the case of the shipbreaking industry, India's low wages seem to have been more of a lure than its loose environmental restrictions.

Second, do nations have a legitimate interest in each other's environmental policies? That turns out to depend on the nature of the environmental problem.

Pollution is the classic example of a negative externality—a cost that individuals impose on others but don't pay for. That's why pollution is a valid reason for government intervention. However, different forms of pollution have very different geographical reach—and only those that extend across national boundaries obviously justify international concern.

Thus, to the extent that Indian shipbreaking pollutes the local environment at Alang, this is a problem for India; it's less clear that it is a problem for other countries. Similarly, air pollution in Mexico City is a problem for Mexico; it's not clear why it's a valid U.S. interest. On the other hand, emissions of carbon dioxide affect the future climate for all countries: They're an international externality and deserve to be the subject of international negotiation.

At this point it's hard to come up with major examples of industries in which the pollution haven phenomenon, to the extent that it occurs, leads to international negative externalities. That situation may change dramatically, however, if some but not all major economies adopt strong policies to limit climate change.

The Carbon Tariff Dispute

In 2009 the U.S. House of Representatives passed a bill that would have created a cap-and-trade system for greenhouse gases—that is, a system under which a limited number of emissions licenses are issued and firms are required to buy enough licenses to cover their actual emissions, in effect putting a price on carbon dioxide and other gases. The Senate failed to pass any comparable bill, so climate-change legislation is on hold for the time being. Nonetheless, there was a key trade provision in the House bill that may represent the shape of things to come: It imposed **carbon tariffs** on imports from countries that fail to enact similar policies.

What was that about? One question that has been raised about climate-change legislation is whether it can be effective if only some countries take action. The United States accounts for only part of the world's emission of greenhouse gases—in fact, as we saw in Figure 12-4, it's not even the largest emitter. So a unilateral reduction in emissions by the United States would have only a limited effect on global emissions, and hence on future climate change. Furthermore, policies that put a high price on carbon might make the pollution haven effect much larger than it has been so far, leading to "carbon leakage" as emissions-intensive industries relocate to countries without strong climate-change policies.

The obvious answer to these concerns is to make the initiative global, to have all major economies adopt similar policies. But there's no guarantee that such an agreement would be forthcoming, especially when some countries like China feel that they

[2] See, for example, Josh Ederington, Arik Levinson, and Jenny Minier, "Trade Liberalization and Pollution Havens," Working Paper 10585, National Bureau of Economic Research, June 2004.

deserve the right to have laxer environmental policies than rich countries that have already achieved a high standard of living.

So what's the answer? The idea behind carbon tariffs is to charge importers of goods from countries without climate-change policies an amount proportional to the carbon dioxide emitted in the production of those goods. The charge per ton of emissions would be equal to the price of carbon dioxide emission licenses in the domestic market. This would give overseas producers an incentive to limit their carbon emissions and would remove the incentive to shift production to countries with lax regulation. In addition, it would, possibly, give countries with lax regulations an incentive to adopt climate-change policies of their own.

Critics of carbon tariffs argue that they would be protectionist, and also violate international trade rules, which prohibit discrimination between domestic and foreign products. Supporters argue that they would simply place producers of imported goods and domestic producers on a level playing field when selling to domestic consumers, with both required to pay for their greenhouse gas emissions. And because carbon tariffs create a level playing field, they argue, such tariffs—carefully applied—should also be legal under existing trade rules.

At this point the issue of carbon tariffs is hypothetical, since no major economy has yet placed a significant price on greenhouse gas emissions. Correspondingly, the WTO hasn't issued any rulings on the legality of such tariffs, and probably won't until or unless a real case emerges. But if climate-change legislation makes a comeback—and it is a good bet that it will sooner or later—it will clearly lead to some major new issues in trade policy.

SUMMARY

1. Some new arguments for government intervention in trade have emerged over the past quarter-century: The theory of *strategic trade policy* offered reasons why countries might gain from promoting particular industries. In the 1990s a new critique of globalization emerged that focused on the effects of globalization on workers in developing countries. And possible action on climate change has raised some major trade issues, including that of the desirability and legality of *carbon tariffs*.
2. Activist trade policy arguments rest on two ideas. One is the argument that governments should promote industries that yield technological *externalities*. The other, which represents a greater departure from standard market failure arguments, is the *Brander-Spencer analysis*, which suggests that strategic intervention can enable nations to capture *excess returns*. These arguments are theoretically persuasive; however, many economists worry that they are too subtle and require too much information to be useful in practice.
3. With the rise of manufactured exports from developing countries, a new movement opposed to globalization has emerged. The central concern of this movement is with the low wages paid to export workers, although there are other themes as well. The response of most economists is that developing-country workers may earn low wages by Western standards, but that trade allows them to earn more than they otherwise would.
4. An examination of cases suggests how difficult the discussion of globalization really is, especially when one tries to view it as a moral issue; it is all too easy for people to do harm when they are trying to do good. The causes most favored by activists, such as labor standards, are feared by developing countries, which believe the standards they will be used as protectionist devices.
5. To the extent that globalization promotes economic growth, it has ambiguous effects on the environment. The *environmental Kuznets curve* says that economic growth initially tends to increase environmental damage as a country grows richer but that beyond a certain point, growth is actually good for the environment. Unfortunately, some of the world's fastest-growing economies are still relatively poor and on the "wrong" side of the curve.

6. There is growing concern that globalization may allow highly polluting industries to move to *pollution havens*, where regulation is looser. There is little evidence that this is a major factor in actual location decisions, at least so far. But that may change if serious climate-change policies are implemented; in that case, there is a strong case for *carbon tariffs*, but also strong criticism of the concept.

KEY TERMS

beggar-thy-neighbor policies, p. 277
Brander-Spencer analysis, p. 274
carbon tariffs, p. 289
environmental Kuznets curve, p. 286
excess returns, p. 274
externalities, p. 272
pollution haven, p. 288
strategic trade policy, p. 271

PROBLEMS

myeconlab

1. What are the disadvantages of engaging in strategic trade policy even in cases in which it can be shown to yield an increase in a country's welfare?
2. Suppose the U.S. government were able to determine which industries will grow most rapidly over the next 20 years. Why wouldn't this automatically mean that the nation should have a policy of supporting the growth of these industries?
3. If the United States had its way, it would demand that Japan spend more money on basic research in science and less on applied research into industrial applications. Explain why in terms of the analysis of appropriability.
4. What are the key assumptions that allow strategic trade policy to work in the Brander-Spencer example of Airbus and Boeing?
5. Suppose that the European Commission asked you to develop a brief on behalf of subsidizing European software development—bearing in mind that the software industry is currently dominated by U.S. firms, notably Microsoft. What arguments would you use? What are the weaknesses in those arguments?
6. What is the main critique against the WTO with respect to environmental protection? How does the WTO justify its position on trade disputes that involve environmental issues?
7. France, in addition to its occasional stabs at strategic trade policy, pursues an active nationalist *cultural* policy that promotes French art, music, fashion, cuisine, and so on. This may be primarily a matter of attempting to preserve a national identity in an increasingly homogeneous world, but some French officials also defend this policy on economic grounds. In what sense could some features of such a policy be defended as a kind of strategic trade policy?
8. "The fundamental problem with any attempt to limit climate change is that the countries whose growth poses the greatest threat to the planet are also the countries that can least afford to pay the price of environmental activism." Explain in terms of the environmental Kuznets curve.
9. Many countries have value-added taxes—taxes that are paid by producers, but are intended to fall on consumers. (They're basically just an indirect way of imposing sales taxes.) Such value-added taxes are always accompanied by an equal tax on imports; such import taxes are considered legal because like the value-added tax, they're really an indirect way of taxing all consumer purchases at the same rate. Compare this situation to the argument over carbon tariffs. Why might defenders argue that such tariffs are legal? What objections can you think of?

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Hearing on Trade Aspects of Climate Change Legislation, Before the Subcommittee on Trade, 112th Cong. (March 24 2009) (statement of Joost Pauwelyn). A clear, concise discussion by a trade lawyer of the issues surrounding carbon tariffs, in which he argues that if done carefully, they would be legal under existing agreements.