

Chapter 4

Globalization,
Free Trade, and
Environmental Quality

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GLOBALIZATION IS A WORD on many lips these days for both good and ill. In fact, seldom have opinions on any subject been so diverse and strongly held. Some see it as a panacea for solving most of the serious economic problems in the world, while others see it as a capitalist plot leading to oppression, exploitation, and injustice. Most observers, however, are between such extremes and see pros and cons. Recent books (for example, Friedman 2000, Stiglitz 2002, Lindsey 2002a, Blustein 2002, Bhagwati 2002, and Irwin 2002a) provide various interpretations of globalization's scope and merit. And Bjørn Lomborg's book (2001) makes a persuasive case that globalization is an important contributor to improving environmental quality almost everywhere in the world. This view is sharply at variance with that of some of the most vocal

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critics of globalization, many of whom argue that environmental degradation is the inevitable consequence of free trade.

So, what is globalization anyway? A minimal definition would include: (1) liberalization of international trade in goods and services; (2) relatively free movement of people across national borders, both for work and for pleasure; (3) mobility of capital worldwide; and (4) free flow of information among nations. Some scholars believe that globalization will continue its inexorable advance, whereas others think it may have already peaked and begun to decline. The central focus of this chapter is the relationship between globalization and environmental quality. Other issues discussed are: (1) how per-capita income is affected by trade liberalization; (2) how increases in income affect environmental quality; and (3) what the future prospects are for globalization and free trade in view of the critiques made against them and recent developments that are protectionist, such as the steel tariffs and the 2002 farm bill.

The Income Gains from Trade

Near unanimity now exists among economists that free trade increases aggregate income and wealth. As long as it is negotiated without coercion, trade is a positive-sum activity because all parties making exchanges expect to benefit. In the late eighteenth century, Adam Smith demonstrated how gains from trade among countries could enhance wealth through specialization of labor and an extension of the size of the market. In 1817, David Ricardo published his famous principle of comparative advantage, which postulated that beneficial trade occurs as long as differences exist in the ratios of costs of production (and relative prices) of various goods in the trading countries.¹

What might cause international differences in the pretrade cost ratios of various goods? The Heckscher-Ohlin theorem postulates that the most important reason is the difference among countries in factor endowments (Takayama 1972, 70). A country will export goods that

more intensively utilize resources that are relatively more abundant and therefore cheaper. If a country has a relative abundance of resources that are closely associated with environmental quality (for example, forests, farmland, fresh water), free trade will lead to more intensive uses of those resources and, hence, may lead to a decline in environmental quality.

For classical liberals, an economic system that utilizes private property, free exchange, and unregulated market prices stands at the core of “liberty” and liberty could well be even more highly valued than income gains from trade. As *The Economist* (2001, 14) explains: “McDonald’s does not march people into its outlets at the point of a gun. Nike does not require people to wear its trainers on pain of imprisonment. If people buy those things, it is because they choose to, not because globalization forces them to.” Fortunately, as a general rule, liberty and income generation are not competitive but are complementary—as a consequence of liberty, society as a whole prospers, and it does this spontaneously, rather than by design of any person or government.

Let us now turn specifically to how much an economy might expect to benefit from trade liberalization. Sachs and Warner (1995) found that gross domestic product (GDP) in developing countries with open economies grew by 4.5 percent annually in the 1970s and 1980s, but that those with closed economies grew by only 0.7 percent annually. Frankel and Romer (1999) estimated that a 1 percent increase in the trade share of an economy increased per-capita income by about 0.8 percent—a relatively large impact from trade expansion. Another study (Harrison, Rutherford, and Tarr 1996) found that agreements to reduce trade barriers reached under the General Agreement on Tariffs and Trade (GATT) Uruguay Round in 1994 resulted “in an annual gain of \$13 billion for the United States, about 0.2 percent of its GDP, and about \$96 billion in gains for the world, roughly 0.4 percent of world GDP” (Irwin 2002a, 31). Yet another study (Brown, Deardorff, and Stern 2001) estimated that “if a new trade round reduced the world’s

tariffs on agricultural and industrial goods and barriers on services trade by one-third, the welfare gain for the United States would be \$177 billion, or 1.95 percent of GDP. . . . The gain for the world would amount to \$613 billion, or about 2 percent of world GDP” (Irwin 2002a, 31).

Evaluating the impact of the North American Free Trade Agreement (NAFTA), Irwin (2002a, 32) reports the findings of Roland-Holst, Reinhardt, and Schiells (1992) that moving from the assumption of constant returns to scale to the assumption, permitted by trade, of increasing returns to scale “boosted the calculated U.S. welfare gains from 1.67 percent to 2.55 percent of its GDP, Canadian gains ranged from 4.87 percent to 6.75 percent of its GDP, while the gains for Mexico were from 2.28 percent to 3.29 percent of its GDP.”

Perhaps the most persuasive evidence of the beneficial effects of trade liberalization is the economic performance of those developing countries that have greatly expanded trade over the past few decades (the so-called Asian tigers: Taiwan, Singapore, Hong Kong, and South Korea) compared with those that have chosen to discourage trade through “import substitution” policies (much of Latin America and most of Africa). The income growth rates of the former group have been spectacular, whereas none of the latter group has had steady economic growth. Import substitution failed as an economic doctrine because trade protection policies produced vast distortions in relative prices and increased production costs (Perkins et al. 2001, 38).

The tiny island of Taiwan provides a shining example of what can occur when a country follows a liberal trade policy. Now the world’s fifth-largest trading nation and eighteenth-largest economy, in less than forty years Taiwan’s real per-capita income has risen from about \$200 to over \$13,000. Taiwan’s huge neighbor, the People’s Republic of China, offers another example. Since opening its economy to international trade and investment in the 1970s, China has grown at annual rates nearing or exceeding double digits (Perkins et al. 2001, 76–78).

The societal economic benefits from free trade extend beyond income gains. As Irwin (2002a, 34–36) points out:

To the extent that economists focus only on trade's effects on production or income, they understate the gains from trade. . . . By overlooking effects on variety, the standard calculations of gains from trade clearly understate the true advantages of international commerce. . . . Trade improves economic performance not only by allocating a country's resources to their most efficient use, but by making those resources more productive in what they are doing. . . . International trade contributes to productivity growth in at least two ways: It serves as a conduit for the transfer of foreign technologies that enhance productivity, and it increases competition in a way that stimulates industries to become more efficient and improve their productivity, often by forcing less productive firms out of business and allowing more productive firms to expand.

As Irwin suggests, an important benefit from international trade is the importation of technological advance from trading partners. "Between a quarter and a half of growth in U.S. total factor productivity may be attributed to new technology embodied in capital equipment" (Irwin 2002a, 36). Eaton and Kortum (2001) found that "about a quarter of the differences in productivity across countries is due to differences in the prices of capital equipment . . . countries more open to trade gain more from foreign research and development expenditures" (Irwin 2002a, 36–37). Another study (Keller, 2000) corroborated this conclusion by finding that a country's total factor productivity depends not only on its own research and development (R&D), but also on how much R&D is conducted in the countries with which it trades. Developing countries that conduct little R&D themselves benefit from that done elsewhere because trade makes the acquisition of new technology less costly (Irwin 2002a, 37).

This brief review of empirical studies provides support for the theory that trade liberalization has a significant positive impact on the creation of income and wealth, as well as a number of other beneficial effects.

A current concern is that trends toward the increasing globalization and freer trade of recent years may not continue in light of recent events, such as the tragedy of September 11, 2001, and the subsequent war on terrorism, the economic meltdown in Argentina and other countries, the slowdown in the economic growth of most developed countries, the performance failure of prominent American business and accounting firms, and the recent turn toward protectionism in the United States and the retaliation of other countries that has already begun. In 2001, the rate of growth in world trade slowed sharply, to 2 percent from a growth rate of 12 percent in 2000 (*Wall Street Journal* 2002a). Much could be said about each of the reasons for the slowdown, but a few additional remarks will have to suffice.

The terrorist disaster of September 11, 2001, and related events have produced significant changes in the trade environment. People and goods moving among nations are monitored much more closely and trade is much more costly (*The Economist* 2002b, 13). The turn toward protectionism by the Bush administration and the U.S. Congress is also a major setback for free trade. On March 5, 2002, the Bush administration announced a comprehensive plan to protect the steel industry by imposing 30 percent tariffs on the main products of most of the big integrated mills. Other steel products will face tariffs from 8 percent to 15 percent.

The European Union (EU) is leading a counteroffensive by “demanding compensation for the cost of the steel tariffs” (*The Economist* 2002a, 63). In a rare act of prudence, however, it put off any direct retaliation against the U.S. tariffs with tariffs of their own, although it may take such action later (*Wall Street Journal* 2002b, A14). The Japanese also are threatening retaliation. Especially disturbing to free traders is that all sides in the dispute insist that their actions are consistent with global trading rules and that they are erecting protectionist measures only in order to promote free trade.

It is true that the U.S. Congress has now given trade promotion authority (TPA, sometimes called “fast-track”) to the president, a con-

cession never given to President Clinton. It commits Congress to vote up or down (that is, without amendments) on trade agreements. But Brink Lindsey argues that the way the TPA fight was fought will make it more difficult to get trade liberalization. “The Bush administration made one concession after another to protectionist and pro-subsidy lobbies—imposing steep duties on steel and lumber; caving in to the textile industry; bringing pressure against opening markets to Caribbean, South American, and Pakistani goods; and, perhaps worst of all, acquiescing in egregiously profligate new farm subsidies” (Lindsey 2002b, A14). The TPA bill also instructs American trade negotiators to regard labor and environmental goals as principal negotiating objectives and protects the antidumping rules that have been used for protectionist purposes in the past (*The Economist* 2002c, 57). It remains to be seen, therefore, whether the Bush administration can be effective in pushing a trade-expansion agenda.

The two industries that have proved most resistant to trade liberalization—and yet are of critical importance to the developing countries—are agriculture and textiles. At the Uruguay round of the GATT, the developed countries agreed to limit agricultural export subsidies, but no real change has occurred. The 2003 Doha meeting of the World Trade Organization (WTO), the existence of which is another outcome of the Uruguay round, produced an agreement that agricultural export subsidies as well as general agricultural subsidies within the developed countries would be eliminated.

So what did the United States actually do in farm policy? The Farm Security and Rural Investment Act was passed by Congress and signed by President Bush on May 13, 2002. It increases farm subsidies to unprecedented levels and will likely undermine any hopes of liberalizing agricultural trade. It is ironic, in fact, that “it was the Americans who insisted on putting freer trade in agriculture at the heart of the Doha round” (*The Economist* 2002a, 66).

As to the effects on trade, perhaps even more important than the dollar amount of the subsidies is the way they are structured. The 1996

farm bill decoupled income-support payments for the basic crops (cotton, rice, wheat, feed grains) from the quantity produced. Hence, the payments themselves had little output-increasing effects. The new farm bill, however, allows the base acreage and base yields that determine the amounts of government payments to each farm to be updated to 2001. The effect will be to provide incentives to increase output, which will augment the need for American farmers to increase exports. Since the United States is the world's largest agricultural exporter (roughly half of corn, wheat, cotton, and rice is exported), the impact on world prices will probably be significant. As a consequence, incomes of farmers in countries that depend on agricultural exports could be catastrophically reduced (Thurow and Kilman 2002). Given the American farm bill, the EU, which was reluctant to place agriculture on the negotiating table at Doha, will likely put off any reduction in their own farm subsidies (*The Economist* 2002a, 63–66).

The Doha agreement also addresses textiles—it calls for the quota system on textiles to be phased out by 2005, which would benefit developing countries. Given the political pressure for protection, however, the prospects for significant and permanent change in textiles may be just as dismal as for agricultural reform. In sum, the next decade, and perhaps beyond, may not be a happy time for free traders.

Trade and the Environment

The nexus between international trade and environmental quality is more complex than appears at first blush. Three connections will be explored in this section: (1) increases in incomes and demand for environmental quality; (2) direct trading in environmental goods; and (3) indirect effects of trade on environmental regulation and technical change.

Income and Environmental Quality

If free trade unambiguously increases average per-capita income as argued earlier, what can be said about the relationship between the level and growth of income and environmental quality?

A major contribution to what is known about trade and the environment is Bjørn Lomborg's outstanding book *The Skeptical Environmentalist* (2001).² Lomborg's first chapter, "Things Are Getting Better," is a comprehensive survey of the current state of the world's environment. Lomborg uses the same indicators and data sources as those utilized by prominent "green" organizations whose allegations include an increasing population overrunning the capacity of the world to feed itself; falling levels of human health; shrinking forests; eroding soils; declining water quality; falling groundwater tables; disappearing wetlands; collapsing fisheries; deteriorating rangelands; rising world temperatures; dying corral reefs; and disappearing plant and animal species. In a *tour de force*, Lomborg demonstrates that fears of these deteriorating conditions are unfounded—instead of the environment getting worse, it is actually improving in nearly all respects.

Lomborg (2001, 29) also indicates why this improvement is occurring. Trade and less costly transport effectively act to reduce risks and make local areas less vulnerable to natural resource exhaustion and depletion. This is a tremendously important insight. In a trading economy, production does not necessarily have to take place at the physical location of demand, but where it is most efficient. An implication is that as resource scarcity occurs and prices and costs rise in a trading world, production will shift to other locations with less scarcity and lower prices and costs. The effect is that each country can almost indefinitely postpone running into a wall imposed by resource scarcity, and all of the trading economies will benefit.

Lomborg makes another salient point: "We have grown to believe that we are faced with an inescapable choice between higher economic welfare and a greener environment. But, surprisingly . . . environmental

development often stems from economic development—only when we get sufficiently rich can we afford the relative luxury of caring about the environment” (Lomborg 2001, 32–33).

Direct Trade in Environmental Goods

Another way that international trade and the environment are related is through direct trading in environmental goods, such as debt-for-nature swaps and pollution-emission rights, both of which have become prominent in the past two decades. Gains from trade may be large because of differences among countries in their endowments of nature and in their preferences for environmental goods.

A debt-for-nature swap typically involves three or more parties: an international conservation organization (such as the Nature Conservancy or the WWF), a conservation organization from the country where the conservation work is to be done (host country), and one or more government agencies in the host country. The international conservation organization desires to maintain or improve the environment in the host country and is willing to pay because its members place high value on environmental amenities. The host-country conservation organization has the interest and presumed competence needed to manage a conservation project, and the host-country governmental organizations facilitate the transfer of the debt, for a price, and will generally disburse the funds (Deacon and Murphy 1993, 1997).

The process ordinarily begins when the debtor country’s central bank agrees to sell some of its external debt, usually because the country has a problem generating foreign exchange and does not have the hard currency to pay its foreign debts. The international environmental organization can often acquire the debt at a significant discount, especially if it is willing to take the proceeds in the currency of the host country—no problem, since the host country is where the expenditures for environmental improvement will occur.

A swap normally requires that the host country place domestic

currency bonds in an environmental trust fund held in the country's central bank where the funds will be at the disposal of the international conservation organization and disbursed to the host-country conservation organization. Deacon and Murphy (1993) analyzed some of the contracts covering these swaps and identified the transaction costs inherent in them. Costs tend to be large for several reasons: coping with conventional free-rider problems, specifying the desired environmental goods and services, monitoring the provider's conservation input and its shirking, and facing host-country public resentment over the threat of lost national sovereignty imposed by the agreements (Deacon and Murphy 1993, 69).

The lack of enforceability of these contracts is a severe impediment to originating these swaps and explains why thus far they have been concentrated in a small number of developing countries. Deacon and Murphy (1997) inquire if there are attributes of countries that predispose them to become involved in swaps with the developed world, and they find, *a priori*, that these swaps are more likely in countries where threats to species and other environmental resources are most acute and in those that have heavy debt burdens. Also, swaps are expected to be more prevalent in countries with a stable rule of law, which is conducive to honoring contracts. Empirical data confirm the validity of these expectations (13).

Direct trading for the right to emit pollutants among countries also has potential for reducing the costs of international agreements to control pollution. The Kyoto Protocol, for example, specifies emission targets for each participant developed country (the developing countries were exempted from the agreement). The protocol also establishes, however, the possibility of trading rights for carbon dioxide emissions that might affect the atmosphere of all countries. Countries would be given allowances to emit carbon dioxide, but then could buy and sell these rights at a negotiated price. All trading countries could be made better off in trading pollution rights to those countries in which the costs of reducing emissions are highest. Lomborg (2001) cites studies

(for example, Nordhaus and Boyer 1999) showing that the cost of the Kyoto Protocol would be \$346 billion a year with no trades in emission rights, whereas with trade permitted among the rich countries the cost drops to \$161 billion annually. If trade were global among all countries, the aggregate cost would be even lower, at \$75 billion. Since these potential gains are so large, trading markets would surely arise and institutions would surely be fashioned to accommodate them. The United States argued strongly for this trading strategy but has withdrawn from the protocol, so perhaps the most powerful advocate for emissions trading within the protocol is now gone (Lomborg 2001, 303).

Environmental Regulation and Technical Change

A seminal paper by Antweiler, Copeland, and Taylor (2001) provides convincing theoretical and empirical evidence that international trade is good for the environment. They postulate that trade affects environmental quality through three channels: (1) the location of production; (2) the scale of production; and (3) the techniques of production. Their econometric model estimates the independent effects of each of these channels on variation in the concentrations of sulfur dioxide in the air among the countries sampled. Changes in the location of production attributable to international trade are found to be empirically trivial. Freer trade results in an increase in the scale of production, and this effect has a modest negative impact on environmental quality (more output is associated with a little more pollution). A 1 percent increase in the scale of production raises pollution concentrations by 0.25 to 0.5 percent for an average country in the sample. It is the increase in income produced by trade liberalization that is the dominating force, driving concentrations of pollutants down by a significant amount (1.25 to 1.5 percent) via the technique effect (Antweiler, Copeland, and Taylor 2001, 877–78). The critical explanatory factor is that wealthier countries value environmental amenities more highly and enhance their production by employing environmentally friendly technologies.

The findings of this study are in sharp contrast to what some of the most vocal opponents of globalization and free trade believe, which is that if companies are to be internationally competitive as free trade requires, governments have no choice but to dismantle health, safety, and environmental regulations. In the language of the day, international competition induces a “regulatory race to the bottom.”

On a purely theoretical level, the work of Heckscher (1949) and Ohlin (1933) implies that trade might induce countries rich in natural resources (and associated environmental amenities) to utilize these resources more intensively and hence reduce environmental quality. On the other hand, this theory also predicts that polluting, capital-intensive manufacturing will tend to locate in the richer developed countries, where capital is relatively cheap. Hence, on the basis of theory alone the net environmental effects are ambiguous, so the question must be settled by empirical evidence.

Jagdish Bhagwati (2002) argues that although the race-to-the-bottom argument may be theoretically valid, it fails on empirical grounds. Little evidence exists that governments actually play the competitive game by offering to cut standards or that multinational corporations are seduced by such concessions (58–59).

Indeed, most recent trade agreements affirm the right of each country to choose its own level of environmental protection. The North American Free Trade Agreement (NAFTA), for example, specifically provides that no member country should relax its health, safety, and environmental standards for the purpose of attracting or retaining investment in its territory. Moreover, arbitration tribunals are established specifically to referee protests and conflict, including those in the environmental arena (Globerman 1993, 28).

What about the possibility that national governments competing for trade will be less inclined to pass and enforce environmental standards, given the industrial dislocations and short-term unemployment that are alleged to arise from trade liberalization? Globerman (1993, 38) argues that empirical evidence does not support this contention

either. Canadian and American protective tariffs have been reduced over time, yet there has been neither diminution of environmental standards nor enforcement of them. In the EU, pressure from those countries enforcing the rules and adopting their own tough antipollution laws is apparently bringing about compliance by all members. The bottom line is that each country must decide for itself what the optimal combination of trade and environmental policies suits it best because of differences in preferences, income, and the assimilative capacities of natural resources.

Lomborg cites a 1972 World Bank study that investigated whether there is a general tendency for economic growth to lead to lower environmental quality initially, but then later for growth to push in the opposite direction. The study found that in the first phases of growth, countries tend to pollute more, after which their pollution levels fall. Lomborg argues that pollution has fallen for all nations at all levels of wealth and believes that “this is due to continuing technological development, which makes it possible to produce the same amount of goods while imposing less of a burden on the environment. Developing countries can buy progressively cheaper, cleaner technology from the West” (2001, 176).

In specific reference to NAFTA, Bruce Yandle (1993, 8) observes:

[T]he Office of the U.S. Trade Representative developed a “hit list” of industries vulnerable to the intertwined forces of reduced tariffs and high-cost pollution control. . . . After examining 445 U.S. industries, the analysts found eleven vulnerable to the effects of environmental rules, reduced tariffs, and relaxed investment restrictions. The “hit list” industries are specialty steel, petroleum refining, five categories of chemicals, including medicinal compounds, iron foundries, blast furnaces, and steel mills, explosives, and mineral wool. Probing deeper, the commission’s report notes that ten of the eleven industries have high capital intensity, thus reducing the likelihood that plants will relocate to take advantage of lower environmental costs in Mexico. . . . Finally, environmental quality may improve because new plants

tend to use the latest technology and equipment, which reduce inefficiencies and pollution.

The main implication of the trade commission's study is that without searching and detailed analysis, industry-by-industry, environmental problems alleged to be the consequence of trade liberalization will likely be grossly exaggerated.

Other studies turn the question around—how do environmental regulations affect trade flows? Antweiler, Copeland, and Taylor (2001, 879) suggest that

[a] common result from these studies is that measures of environmental stringency have little effect on trade flows. This result immediately casts doubt on the pollution-haven hypothesis, which holds that trade in dirty goods primarily responds to cross-country differences in regulations. . . . We too find little support for the pollution-haven hypothesis. We do not infer from this, however, that the cost of regulations does not matter to trade flows; instead, we suggest it is because other offsetting factors more than compensate for the costs of tight regulation in developed countries.

A good example of trade effects on the environment can be found in agricultural commerce. Liberalization in trading agricultural commodities would probably shift production away from the EU and Japan where it is expensive and chemical-intensive, to developing countries, which use far less pesticide and fertilizer that do environmental damage. Further, the reduction of agricultural subsidies that might result from free-trade agreements would reduce the incentive to cultivate marginal lands in developed countries and thereby reduce soil erosion and increase wildlife habitat (Patterson 1993, 62; Gardner 1995).

A final point on the relationships between technical change and the environment is that rapid technological change makes predictions about future long-term environmental change extremely hazardous. For example, a model developed by Chakravorty, Roumasset, and Tse (1997) simulates the effects on the world's biosphere of carbon-dioxide

emissions from the burning of carbon fuels. These scholars argue that “popular predictions of the probable extent of global warming are based on models that do not generally account for price-induced energy conservation, including endogenous substitution between alternative energy sources, cost-saving improvements in extraction technology, and the rapidly declining cost of solar-powered electricity generation” (p. 1200). Using data on extraction costs, estimated reserves, and energy demand for the world economy, Chakravorty, Roumasset, and Tse find that if historical rates of cost reduction in the production of solar energy are maintained, more than 90 percent of the world’s coal reserves will never be used as the world shifts from coal, oil, and natural gas to solar energy. As this occurs, global temperatures will rise by only about 1.5 to 2.0 degrees centigrade by the middle of the twenty-first century, then will decline steadily to pre-industrial levels. Carbon emissions will continue to increase for the next three decades followed by a sharp drop (1201–1203). These findings demonstrate that serious forecasting mistakes will be made unless the effects of technological change are included in analyses of environmental problems.

Despite the manifest and substantial beneficial effects of globalization and trade on the environment as discussed, numerous critics have raised objections, some of them specifically on the grounds that freer trade will result in the degradation of the environment. Even those who oppose globalization for other than environmental reasons are unwittingly and indirectly harming the environment. For this reason, these critics and their contentions will be discussed next.

Critics of Globalization and Free Trade

The main classes of opponents to globalization are those in protected domestic industries (including their labor unions and political supporters), many environmental groups, politically radical protestors who despise capitalism, a few leaders of developing countries who view globalization as a threat to their political and economic autonomy, and

some academics and intellectuals who are primarily critics of the international institutions of globalization, especially the International Monetary Fund (IMF) and the World Trade Organization (WTO).

Trade and the Distribution of Income

The trade unions in protected domestic industries are among the staunchest opponents of trade liberalization. They argue that free trade will worsen the relative economic position of working people and increase inequality in the distribution of income. Are they correct?

The Stolper-Samuelson (1941) factor-price-equalization theorem establishes a theoretical link between trade and the distribution of income. The theorem postulates that the relative and absolute prices of the factors of production (for example, labor, capital, land) eventually will be equalized between trading countries. The most interesting implication of the theorem is that even with complete absence of movement of the factors of production among countries, the competitive forces of trade in goods will move factor prices toward equality. Hence, if labor is poorly paid in developing countries (relative to its productivity) compared with wages in rich countries, trade can be expected to reduce the disparity of wages between countries. Equivalently, relatively abundant and cheap factors in an economy will gain from trade liberalization and relatively costly factors will lose. For example, the United States has a relative abundance of land and capital as reflected in their relative prices and a relative scarcity of labor compared with most other countries. The United States, therefore, exports land- and capital-intensive goods and imports labor-intensive goods. Hence, a tariff on labor-intensive goods will increase the relative price of these goods and increase the real wages of workers in the United States who produce them. The tariff shifts factors of production from the export-goods industry to the import-competing-goods industry. *Ceteris paribus*, the tariff can be expected to increase wages and decrease land rents—implying that labor unions in

the United States will favor trade protection while farmers and landowners will be free traders.

The real world, however, is more complex than is implied in this simple explication of the theory. For one thing, labor is not homogeneous, especially in modern developed countries. Some labor embodies large amounts of human and scientific capital (science-intensive labor) while other labor embodies very little (unskilled labor). If the United States has an abundance of science-intensive labor relative to other countries, free trade will induce exportation of goods that utilize science-intensive labor. A tariff on goods that use unskilled labor will increase unskilled wages relative to science-intensive wages. Because poor people in the United States tend to be relatively unskilled, protection of those industries that utilize unskilled labor will tend to reduce inequality in the distribution of income.

What do empirical studies show about how the gains from trade are distributed between and within trading countries? Does free trade harm the poor while benefiting the rich in both developing and developed countries, as is alleged by many critics of globalization?

Rodrik (1997) finds that because capital is more mobile across countries than is labor, the competitive force of globalization leads to lower taxes on capital and higher taxes on labor. Because capital is owned disproportionately by the wealthy, lower taxes on capital would increase income disparity. Rodrik (1998) also argues that the downward leveling of capital taxes across countries may raise the tax burden on labor to politically unacceptable levels or else will compromise social and worker protection programs that in his view have allowed countries gradually to lower trade barriers over the postwar period (Obstfeld 1998, 20). But on the other hand, lower taxes on capital will encourage saving and investing and thus lead to higher levels of labor productivity, economic growth, and higher living standards across the board.

Models of interindustry trade among rich countries have shown that the exploitation of scale economies made possible by trade generally increases the demand for skilled labor and its relative reward compared

with unskilled labor (Bhagwati 2002, 83). Larger markets made possible by trade increase returns from innovation and investments in R&D as well as from human capital, and in this regard, the results of trade are similar to those of technological advance.

A study by Cline cited without reference in *The Economist* (2001) estimates that technological change is five times more powerful in widening short-term inequality in America than globalization. Cline also found that both trade and technological advances are overwhelmed in importance by the main force operating in the opposite direction to reduce income inequality: namely, investment in human capital through education and training (*The Economist* 2001, 9).

The Stolper-Samuelson theorem also implies that globalization may produce displacement of some workers in rich countries, leaving them worse off, but Bhagwati (2002, 89) believes that the evidence for this in the United States is weak. One of the reasons is that large trade deficits in the current account in the 1980s, when pressure on real wages was significant, were accompanied by large surpluses in the capital account. This inflow of direct foreign investment increased either jobs or wages or both. For these and other reasons, Bhagwati argues that the alarm of the unions over the adverse effects of free trade on the real wages of workers in rich countries is far from persuasive.

Another important reason that the negative effects of trade on employment may be exaggerated is that nontraded services have become an increasingly higher proportion of aggregate production and employment. Only about 17 percent of American workers, those employed in agriculture, mining, and manufacturing, are now directly exposed to international competition, as opposed to 40 percent in 1960 (Irwin 2002a, 11). Because of free electronic information provided by the Internet revolution, however, this trend may not last. Micklethwait and Wooldridge (2002) show that at least part of the service industry (accounting, marketing, design, customer service, credit evaluation) is shifting to low-wage developing countries such as India, the Philippines, and Eastern Europe. Well-schooled and trained workers are benefiting

in an unprecedented way, and so are consumers of these services across the world as costs and prices fall and real incomes rise.

What happens to jobs and wages in poor countries as their economies are liberalized? Here the critics of globalization clearly have it wrong. In theory, free trade will increase the demand for poor-country labor, pushing up wages, and competition for labor will benefit even those workers who are not employed in trade-related jobs. Openness to foreign trade and investment encourages capital flows to poor economies, in which the marginal productivity of capital tends to be higher, and this infusion of capital drives the marginal productivity of labor higher. Capital tends to be especially productive if it is provided by multinational corporations because the funds are usually packaged with imported skills and technology. There is little doubt that a major agent of globalization in the world is the multinational company—therefore, a favorite target of the political left. Multinational corporations account for most foreign direct investment as well as a rising share of foreign trade in the developing countries—maybe as much as two-thirds of manufacturing (Amsden 2002, 13).

A World Bank report issued in December 2001 finds, unsurprisingly, that trade and globalization have benefited some poor countries more than others. Globalization was measured as a rise in the ratio of trade to national income. The more-globalized poor countries grew at an average annual rate of 5 percent in the 1990s, whereas less-globalized poor countries shrank by 1 percent over the decade (World Bank Group 2001a). By comparison, rich countries grew at the rate of 2 percent.

Lomborg (2001, 74) shows that if per-capita income comparisons among nations are calculated in terms of the purchasing power of various currencies, the developing world has been catching up with the developed world since the 1950s. Lomborg sees no reasons why these trends will not continue throughout the next century. So much for the allegation frequently heard from critics of globalization that trade increases incomes in rich countries at the expense of incomes in poor countries.

Of course, many scholars believe that the distribution of income may be a poor proxy for the distribution of human well-being, even if reckoned in terms of purchasing power parity. Over the past century, advances in other indicators of well-being, such as increased mortality and reduced morbidity, have been captured by developing as well as developed countries. Diseases that have burdened mankind for centuries, especially in developing countries—plague, cholera, polio, small pox, tuberculosis, and malaria—have been controlled, if not eliminated, almost everywhere. The increasing prevalence of HIV infection and AIDS is a notable exception. Improved sanitation and water quality have reduced digestive tract diseases, and the availability and lower cost of drugs, from aspirin to quinine to antibiotics, have made life better across the globe. There can be little doubt that these improvements in human health and life longevity are at least partially attributable to globalization and trade (see chapter 2 in this volume).

What about the allegations frequently advanced by labor unions and the political left in developed countries that workers in developing countries lack the rights, legal protections, and union representation enjoyed by workers in rich countries and that labor is supposedly kept in poverty by being forced to work in sweatshops and that only capitalist owners benefit?

Bhagwati finds unpersuasive “the frequent complaint in some poor countries that free trade accentuates poverty. . . . The facts show that a shift out of autarky into closer integration into the world economy is producing better, not worse, results for poverty reduction” (2002, 89–90). Indeed, a recent study by the World Bank Group confirms this view by suggesting that trade liberalization of the kind contemplated by the Doha agreement would lift an extra 300 million people out of poverty by 2015 (2001b).

The most compelling evidence, however, is provided by the record of many developing countries in reducing poverty through trade liberalization. Those that have achieved sustained and rapid growth, such as those in East Asia, have made remarkable progress in poverty reduc-

tion. On the other hand, countries where widespread poverty persists are those in which growth is weakest, capitalism is least developed, and trade is practically nonexistent, as in sub-Saharan Africa, Myanmar, and North Korea. Improved property rights in land can also make a significant difference in alleviating poverty. As Hernando de Soto (2000) has shown in his remarkable book, *The Mystery of Capital*, it is the poor who suffer most from obstacles to small-scale enterprise and insecure titles to land.

Politically Radical Protestors of Capitalism

Among the most vociferous protesters at meetings of the IMF, the World Bank, and the WTO is a group of mostly young people of the political left who hate markets and capitalism. Bhagwati (2002, 5–8) asks why free trade has become the target of what seems to be a growing anticapitalist and antiglobalization movement among the young. He argues that two factors are primarily responsible. First, capitalism is perceived to be a source of injustice rather than as providing economic opportunity for the majority. And second, in their colleges and universities many young Americans have been taught the deconstructionist philosophy of Jacques Derrida, which propounds a political wasteland where belief and action yield to cynicism and anarchism and which feeds anti-intellectual attitudes.

Greg Rushford (2002) provides an illustration of the activities of these haters of globalization. “Fair-trade” coffee sells at premium prices at retail outlets and purports to have been produced by small-scale growers in Guatemala. These farmers are alleged to be pitted against a large coffee plantation that exploits its workers. Fair-trade coffee is represented in the United States by Global Exchange, a San Francisco-based group that targets big names in the coffee industry, including Starbucks and Procter & Gamble, and demands that they carry fair-trade coffee. Members of Global Exchange were active protesters at the WTO meetings at Seattle, Doha, Genoa, and New York. Rushford went

to Guatemala to investigate the allegations of labor exploitation brought by Global Exchange and found that the plantation pays its workers about twice the existing minimum wage and, in addition, provides social benefits that are not available to coffee laborers who work off the plantation. Rushford concludes that the fair-trade coffee project of Global Exchange is a cleverly disguised effort to condemn capitalism.

I attended a rally at Dolores Park in San Francisco on April 20, 2002. The rally was widely advertised as a citizen protest against globalization and free trade. Most of the attendees were young (between ages 18 and 30), and it was apparent to me that they were serious about what they were doing. A series of speeches were virulent tirades aimed at capitalism, globalization, Israel and Prime Minister Ariel Sharon, President George W. Bush (mostly for the war on terrorism), free trade, the WTO, and the IMF. Hundreds of placards and banners held by the protesters contained the same invective as the speeches. It was obvious to me that the demonstrators would have joined the protesters at the WTO-IMF meetings if they could have, and perhaps many of them did.

Columbia University professor Joseph Stiglitz, fresh from appointments as chairman of President Clinton's Council of Economic Advisers and chief economist at the World Bank, writes: "It is the trade unionists, students, environmentalists—ordinary citizens—marching in the streets of Prague, Seattle, Washington, and Genoa who have put the need for reform [of the IMF and the WTO] on the agenda of the developed world" (2002, 9). Although the protesters at these meetings were undoubtedly a somewhat heterogeneous group as Stiglitz suggests, in my view it is hardly accurate to portray them as ordinary citizens in the sense that their views would represent those of most ordinary Americans.

Of the leaders of developing countries who are resisting globalization, perhaps the most prominent is Dr. Mahathir Mohamad, president of Malaysia. At the 2001 Shanghai meeting of the Asian Pacific Economic Cooperation, Mahathir opined that opening economies to free capital movement gives too much power to Western governments and

investors who want to control, if not impoverish, poor nations. This view stands in stark contrast to the official communiqué of that conference, which states that economic globalization is really the only hope for ridding the world of poverty.

Of course, it is clearly evident that many less developed countries have benefited from global integration while many others have not. A recent study by the World Bank shows that 24 countries, home to more than three billion people, including China, Brazil, India, and the Philippines, have increased their trade-to-GDP ratios over the past 20 years, and their GDP growth rates have exceeded 5 percent annually during the 1990s. Other countries, however, with another two billion people, including most of sub-Saharan Africa as well as some countries in Asia and the Middle East, have become less rather than more globalized, and their growth rates are very low or even negative (World Bank Group 2001b). These facts support the inference that developing countries that do not open up their economies risk being left further and further behind.

Critics of the IMF and the WTO

Even among economists, the performance of the WTO and the IMF is controversial. Wide agreement exists as to the benefits of international capital mobility: Markets channel world saving to its most productive uses, irrespective of location; residents of different countries are allowed to pool various risks, hence achieving more effective insurance than purely domestic arrangements would produce; countries suffering economic downturns, a financial crisis due to depletion of foreign exchange, or natural disasters can borrow from abroad; and developing countries with inadequate capital or savings can borrow to finance investment, thereby promoting economic growth (Obstfeld 1998, 10).

But, it is argued, a significant downside to rapid capital movements has surfaced in the financial crises in Mexico, Russia, East Asia, Brazil, Argentina and, recently, Uruguay. Long-term foreign direct investments

are not the problem because they are illiquid and cannot flee a country on short notice. Short-term “hot money,” however, which chases international differences in interest rates, can be withdrawn quickly, often producing large changes in foreign exchange reserves, especially if the loans are denominated in hard foreign currencies (for example, dollars) and the exchange rate is pegged in order to reduce the risk of currency fluctuations. Countries in this situation are vulnerable to speculative attacks on their currency and may face the threat of contagion from financial crises elsewhere (Rodrick 1997, 5).

The critics of globalization (and of the WTO and the IMF) from the political left argue that international financial and trade liberalization itself contributes to financial crises. Liberalization imposes crippling debts on poor countries, exposes them to fluctuations of the global business cycle, delivers windfall profits to domestic and foreign speculators, and weakens rules that protect consumers and workers from abuse (*The Economist* 2001, 21).

Professor Stiglitz is an unabashed critic of the organizations of globalization, especially the IMF. He believes that the rich countries are rigging the globalization agenda so as to benefit themselves (2002, 7). In fact, Stiglitz argues that the IMF has not fulfilled the lofty objective promised by its founding, to help developing countries grow by using expansionary macroeconomic policies, such as increasing government expenditures and lowering interest rates. Instead, today the IMF typically provides loans only if recipient countries do the exact opposite, such as cutting deficits, raising taxes, and increasing interest rates—all of which lead to a contraction of the economy (12–13). Many economists agree with Stiglitz that IMF prescriptions for economies in financial crises are often inappropriate as remedies for the economic downturns that inevitably accompany these crises.

That borrowing countries must share the blame, however, is seldom admitted by the left. Governments that channel foreign borrowings into large budget deficits and consumption rather than into sound investment inevitably have problems generating resources to repay loans.

Some countries have openly encouraged foreign borrowing in excessive amounts, knowing that international agencies will bail them out if repayment trouble arises (*The Economist* 2001, 22).

Criticism of the international financial institutions by the political right is quite different and focuses on the moral-hazard problem. The IMF sees its role primarily as protecting rich-country lenders against loan defaults by borrowing countries. Because rich-country bond-holders have been bailed out by the IMF time and again when crises occurred, excessively risky uses of funds have been encouraged. Hence, IMF lending creates perverse incentives for international lenders as well as international borrowers.

The ubiquity and severity of these moral-hazard problems have prompted some free-market economists to recommend abolishing the IMF entirely. They argue that “without an IMF, if a country runs out of hard currency, its foreign creditors would be forced to accept whatever they could get in negotiations or lawsuits. . . . [E]veryone would take care to avoid a crisis, knowing how disastrous the consequences would be. Government officials would run more prudent economic policies, and international money managers would be more vigilant about where its money goes” (Blustein 2002, 379). In short, proper incentives would be put in place to produce more responsible and efficient financial decisions.

The international financial crises of the past two decades prompted the United States Congress to appoint a blue-ribbon commission to investigate whether the IMF should be reorganized. Chaired by Professor Allan Meltzer of Carnegie Mellon University, the commission recommended fundamental changes in the way the organization operates. IMF loans would go only to countries that got a “seal of approval” in advance from the IMF by meeting various criteria of sound economic policy, including adherence to standards that ensure that banks maintain sufficient capital. Hence, the IMF would not need to impose policy conditions when it made loans. These reforms in IMF policies seem responsive to the criticisms from both political left and right. But Blu-

stein sees a potential problem with the recommendation: “Suppose the IMF had to drop a country from the list of prequalifiers; imagine how fast a crisis would erupt in that country” (2002, 380–81).

The WTO has been criticized, especially by environmentalist critics, on the grounds that it is an international bureaucracy that is unanswerable to any democratic process. These antidemocratic powers supposedly inhere in the organization’s dispute-resolution procedures, which were strengthened in the Uruguay round of the GATT. Irwin (2002a), however, disputes this negative conclusion. He argues that the power to make trade policy and to write the governing rules really resides with the member governments, not with the WTO. The WTO provides only a forum for consultations and negotiations and has no power to force countries to obey the agreements or to comply with its rulings (Irwin 2002a, 186).

An apt illustration is provided by the WTO rules on environmental quality (World Trade Organization 1999, 455). Irwin (2002a, 191–92) refers to a General Accounting Office study that found:

WTO rulings to date against U.S. environmental measures have not weakened U.S. environmental protections. . . . And these few environmental cases have mainly focused on whether the regulation in question has been implemented in a nondiscriminatory way, not whether that regulation is justifiable. . . . The most relevant provision of the GATT is Article 20, entitled “General Exceptions.” Subject to the requirement that such measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade, nothing in the Agreement shall be construed to prevent the adoption or enforcement by any contracting party of measures . . . (b) necessary to protect human, animal, or plant life or health . . . [or] (g) relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption.

There is also little empirical support for the contention that national policies to protect the environment are irreparably threatened by WTO

rules. The principal strength of the WTO trading system, in fact, is that all countries, including small ones, can receive fair treatment under the rule of law. “The alternative is that more powerful countries simply dictate outcomes to others” (Irwin 2002b, 73).

Irwin also vigorously disputes the allegations of some environmentalists that WTO rules militate against environmental quality. He argues that although there may be tensions between trade policy and environmental objectives, the world trade rules *per se* are not inherently anti-environment. Many WTO decisions reaffirm the rule that countries can maintain their own environmental regulations, so long as they are not discriminatory. And Irwin strongly holds the view that unilateral trade sanctions are a poor instrument for achieving environmental goals and that international agreements on standards are clearly preferable to trade embargoes (Irwin 2002b, 77).

Conclusions

Strong empirical evidence supports economic theory that free international trade creates growth in per-capita income and wealth as well as other societal benefits, such as individual liberty. The great spurts of modern economic growth occurring over the past 200 years, both in individual countries and in the world as a whole, have coincided closely with periods of liberalization of trade and commerce. Those developing countries that have made the most economic progress since World War II are those that have liberalized trade and promoted exports. Those that have turned inward and followed import-substitution policies are almost all economic basket cases. Political democratization, entrepreneurial development, rapid technological advance, free-flowing scientific information, and open capital markets are synergistic with each other and lead to economic growth and development.

The demand for environmental amenities is highly responsive to increases in income. It should not come as a surprise, therefore, that

Lomborg finds practically all environmental indicators improving through time as economic advance occurs.

The findings of this paper strongly corroborate the results from Antweiler, Copeland, and Taylor (2001) that international trade improves the natural environment. An international trading system facilitates the direct trading of such environmental goods as debt-for-nature swaps and pollution rights. Trade also facilitates the transfer of technologies, including those that economize on environmental goods. Compared with autarky, international trade also conserves the use of scarce natural resources, including those that are closely associated with environmental quality, such as wildlife habitat, wetlands, forests, and water. And the rules of the WTO do not encourage a "race to the bottom" in environmental quality, but rather protect the preferences of member nations to establish their own environmental standards.

Although there may be some workers who lose from trade liberalization as their protected status is diminished, the winners from trade greatly outnumber the losers. Indeed, after adjustments run their course, freer trade decreases inequality in the distribution of income in both developed and developing countries that trade with each other. In addition, in the end, the gains from open borders in goods, people, and information are broadly distributed among the people. Therefore, the critics who view foreign trade as a capitalist plot to exploit poor people in developing countries are simply wrong.

The political problem is that trade liberalization is fragile as those few who have been protected lose their privileged position. Strong pressures will be brought to maintain and enhance protection, and politicians enhance their own interests by responding to these pressures. The 2002 farm bill and the erection of new tariffs in lumber and steel are symptomatic of the continuing political struggle between protectionists and free traders. Fast-track authority has been hailed by the Bush administration as necessary to consummate new trade deals, and recent deals made by the Office of the Trade Representative seem to support this position.

Why is trade liberalization so strongly resisted when it is easily demonstrated that consumers' gains exceed producers' losses? The public-choice principle of "concentrated benefits and diffused costs" explains this political bias. The wealth and income interests of producers are highly concentrated, and it pays them to invest large sums in acquiring political favors in the form of protection. By contrast, the interests of individual consumers tend to be highly diffused across the entire population (every consumer may lose a little from a steel tariff or a sugar quota), and it is individually infeasible for them to organize to protect their interests. Additionally, because their individual interests in a specific trade barrier are generally small and diffused, consumers may be even unaware of its consequences. Still, the situation is far from hopeless. Understanding the overall gains from trade, including beneficial effects to the natural environment, will contribute at the margin to pressures for liberalization.

Another obstacle to free trade is the persistence in the world, including in the United States, of a "mercantilist" view of trade. Despite heroic efforts more than two centuries ago to rid the world of this malignancy, Adam Smith has not yet prevailed. Economists continue to advance the cause of trade liberalization but with only limited success. Even the argot of trade in current use seems perverse to the cause. Eliminating a trade barrier is referred to as a "concession" that requires "reciprocity" (*The Economist* 2001, 27). Nearly every person on the street believes that exports are good and imports bad. However, if consumption is the desired end of economic activity, then free trade is a goal that deserves universal support. Economists and other free traders have their work cut out for them to convince others of the merit of this objective.

Notes

1. Comparative advantage is one of the crown jewels of the economics profession. It has shaped the way economists view the world and serves as

the basis for the profession's overwhelming support of free trade (Rodrick 1998, 3).

2. Lomborg's credibility on environmental questions is attributable to two factors: (1) Lomborg's intent as a committed environmentalist was to debunk and disprove the ideas of economist Julian Simon, who had argued that many of the cherished mantras of the environmental community were demonstrably wrong; and (2) as a statistician, Lomborg is trained to evaluate data—their source, validity, and relevance. He also understands how models are constructed and the purpose of *ceteris paribus* assumptions in looking at complex problems. Because he is a statistician, Lomborg sees problems and their solutions in terms of stochastic probabilities rather than as the certitudes that have made modern environmentalism more a religion than a path of scientific inquiry.

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