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The Journal of Economic Perspectives, Vol. 15, No. 3. (Summer, 2001), pp. 113-130.

Stable URL:

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Bridging the Trade-Environment Divide

Daniel C. Esty

Protection. For free traders, this word represents the consummate evil. For environmentalists, it is the ultimate good. Of course, for the trade community, “protection” conjures up dark images of Smoot and Hawley, while the environmental camp sees clear mountain streams, lush green forests, and piercing blue skies. One cannot blame all of the tensions at the trade-environment interface on linguistic differences, but these competing perspectives are emblematic of a deep clash of cultures, theories, and assumptions.

Trade officials often seek to limit efforts to link trade and environmental policy-making, and sometimes to prohibit such efforts altogether. In this regard, the narrow focus and modest efforts of the World Trade Organization’s Committee on Trade and Environment are illustrative.¹ The launch of negotiations for a Free Trade Area of the Americas with an express decision to exclude environmental issues from the agenda provides an even starker example of the trade community’s hostility toward serious environmental engagement. Economists have been prominent among those arguing that pollution control and natural resource management issues are best kept out of the trade policy-making process (Cooper, 1994; Bhagwati, 1999). Other economists, however, have tried to set trade policy-making in a broader context and to build environmental sensitivity into the international trading system (Runge, 1994; Rodrik, 1997; Summers, 2000).

¹ For a full review of the work of the WTO Committee on Trade and Environment, see (<http://www.wto.org/WT/CTE>).

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In fact, there is no real choice about whether to address the trade and environment linkage; this linkage is a matter of fact. The only choice is whether the policies put in place to respond will be designed openly, explicitly, and thoughtfully, with an eye to economic and political logic—or implicitly and without systematic attention to the demands of good policy-making. This article seeks to explain why trade liberalization and environmental protection appear to be in such tension and to push economists to explore more aggressively what economic theory and practice might do to address the concerns being raised.

Trade and Environmental Linkages

Potential Conflicts Between Domestic Regulations and Trade

In recent years, the focus of trade liberalization has shifted from lowering tariffs, which have come down considerably around the world, to the elimination of nontariff barriers to trade (Jackson, 1992). Since many kinds of domestic regulations can potentially be construed as nontariff barriers, the extent and impact of the market access commitment and other regulatory disciplines negotiated in the trade domain has expanded.

A number of the most prominent international trade disputes in the last decade have concerned the clash between domestic regulations and trade rules. In the well-known tuna-dolphin case, the United States banned Mexican tuna imports because the fishing methods resulted in incidental dolphin deaths. In 1991, Mexico obtained a GATT panel decision declaring the United States to be in violation of its GATT obligations for imposing such a ban. In the ongoing beef hormone dispute, the European Union has refused to adjust its “no added hormones in beef” food safety standards despite a series of WTO rulings that its regulations had no scientific foundation and were in contravention of the rules of international trade. The U.S. sanctions against Thai shrimp caught using methods that killed endangered sea turtles were recently deemed to be GATT-illegal. Trade and environment friction can be found outside the WTO, as well. Witness the enormous effort that the European Union has put into harmonizing environmental standards over the past several decades (Vogel, 1994).

There is no end in sight to “trade and environment” cases. If anything, the number of disputes seems to be rising (Sampson, 2000). As global economic integration intensifies, so does the potential for conflict (Lawrence et al., 1996; Dua and Esty, 1997). Public health standards, food safety requirements, emissions limits, waste management and disposal rules, packaging and recycling regulations, and labeling policies all may shape trade flows. Trade disciplines may also affect national-scale environmental efforts, especially to the extent that WTO dispute settlement procedures are used to challenge pollution control or natural resource management programs.

Thus, while fearmongering about lost “sovereignty” (Perot, 1993; Wallach and Sforza, 1999) can be dismissed, the suggestion that trade liberalization constrains

regulatory flexibility rings true. With new issues like biotechnology and climate change emerging, the potential for significant and divisive battles between trade policy and regulatory choices—including environmental rules—looms large.

Increasing Trade, Economic Growth, and Environmental Risks

The literature on the interaction between economic growth and pollution points to what has been called an environmental “Kuznets curve.” The Kuznets curve is a inverted-U relationship which shows that environmental conditions tend to deteriorate in the early stages of industrialization and then improve as nations hit middle-income levels, at a per capita GDP of about \$5000 to \$8000 (Grossman and Krueger, 1993, 1995; Shafik and Bandyopadhyay, 1992; Seldon and Song, 1994). Since the primary purpose of liberalizing trade is to increase economic growth, trade unavoidably affects the level of environmental protection through its impact on the Kuznets curve.

A first concern stemming from the Kuznets curve is that air and water pollution problems tend to worsen in the early stages of development. Many developing countries are living through the part of the Kuznets curve in which environmental conditions deteriorate. In addition, some problems, especially those that are spread spatially or temporally (such as greenhouse gas emissions), do not yet appear to have reached the downward-sloping part of the Kuznets curve in any country. This empirically derived pattern of ongoing deterioration perhaps reflects the fact that, absent reciprocity, the benefit-cost ratio for policy interventions in response to diffuse problems are always negative from a national perspective.

A second concern is that even if expanded trade and economic growth *need not* hurt the environment, there is no guarantee that it *will not* (Harbaugh, Levinson and Wilson, 2000; Hauer and Runge, 2000). The effects of economic growth on trade can be broken down into three effects. “Technique” effects arise from the tendency toward cleaner production processes as wealth increases and trade expands access to better technologies and environmental “best practices.” “Composition” effects involve a shift in preferences toward cleaner goods. “Scale” effects refer to increased pollution due to expanded economic activity and greater consumption made possible by more wealth (Grossman and Krueger 1993; Lopez, 1994). Thus, the claim that growth improves the quality of environment can be rephrased as a claim that, above a certain level of per capita income, technique and composition effects will outweigh scale effects. Empirical evidence on the relative sizes of these effects is limited. But at least some of the time, it appears that expanded trade may worsen environmental conditions (Antweiler, Copeland and Taylor, 1998).

Finally, the odds that increased trade will have net negative environmental impacts rise if resources are mispriced (Anderson, 1998; Panayotou, 1993). Around the world, many critical resources like water, timber, oil, coal, fish, and open space are underpriced (or overpriced) (World Bank, 1997; Earth Council, 1997). Even the WTO acknowledges in its most recent “Trade and Environment Special Report” that expanded trade can exacerbate pollution harms and natural resource man-

agement mistakes in the absence of appropriate environmental policies (Nordstrom and Vaughan, 1999).

Transboundary Externalities

Transboundary pollution spillovers make attention to trade-environment linkages a matter of normative necessity as well as descriptive reality. Perhaps the most discussed issues involve emissions of ozone-layer depleting chlorofluorocarbons and greenhouse gases, which threaten global climate change. But recent advances in tracing the movement of pollutants have also demonstrated long-distance impacts from particulates (Grad, 1997), sulfur dioxide and other precursors of acid rain (Howells, 1995), DDT and other pesticides (Lawler, 1995; Rappaport et al., 1985), mercury and other heavy metals (Fitzgerald, 1993), and bioaccumulative toxics (Francis, 1994). Other transboundary issues involve rules governing shared resources such as fisheries in the open ocean and biodiversity.

The need to control transboundary externalities makes trade-environment linkages essential from the point of view of good economic policy-making. After all, uninternalized externalities not only lead to environmental degradation, but also threaten market failures that will diminish the efficiency of international economic exchanges, reduce gains from trade, and lower social welfare. National governments, no matter how well intended, cannot address inherently international problems such as climate change or fisheries depletion unilaterally. A functioning Global Environmental Organization, operating in parallel with the trading system, might be a "first-best" policy option in response to these challenges (Esty, 2000a). But no such regime exists. Thus, the World Trade Organization along with regional trade agreements cannot avoid some shared responsibility for managing ecological interdependence.

The Political Economy of Trade Liberalization

Taking environmental issues seriously must also be understood as a political necessity for free traders. Forward momentum in the trade realm is difficult to sustain (Bergsten, 1992). In this regard, the trade community cannot risk diminishing further the already narrow coalition in favor of freer trade, especially in the United States. Dismissing environmental concerns, which results in broad environmental community opposition to trade agreements, generates unnecessary and avoidable political resistance to liberalized trade (Esty, 1998a).

Certain environmentalists will always be opposed to trade liberalization because they adhere to a "limits to growth" philosophy. But the environmental community is neither monolithic nor uniformly protectionist. Many mainstream environmentalists believe in "sustainable development" and will support freer trade if they feel that pollution and natural resource management concerns are being taken seriously. For example, the congressional vote in favor of the NAFTA depended critically on the fact that a number of environmental groups came out in favor of the agreement, which translated into support from politicians who define themselves as both pro-free trade and environmentally oriented (Audley, 1997).

Concomitantly, the several recent failures to obtain a majority for new fast track negotiating authority can be attributed to this swing group voting against the legislation because the proposals lacked environmental credibility (Destler and Balint, 1999).

In practice, moreover, there is no empirical support for the suggestion that environmental linkages detract from trade agreements or trade liberalization. The North American Free Trade Agreement, often considered the "greenest" trade pact ever, contains a number of environmental elements and was adopted with an Environmental Side Agreement. There is no evidence that these provisions have in any way diminished the post-NAFTA U.S.-Canada-Mexico trade flows (Araya, 2002; Hufbauer et al., 2000).

One might argue that this political analysis has little to do with economists' role in the trade and environment debate. To the contrary, if the arguments of economists become disconnected from the reality of political pressures and policy imperfections, then economic logic is unlikely to prevail in trade policy-making.

The Arguments for Separating Trade and Environmental Policy

While many "no linkage" economists and trade officials understand the arguments for taking up environmental issues in the trade context, they fear a scenario in which protectionist wolves find their way into the trading system in environmental sheep's clothing (Bhagwati, 1988; Subramanian, 1992).² The sight at the 1999 WTO Ministerial Meeting in Seattle of green activists marching arm-in-arm with avowed protectionists confirmed for many, especially in the developing world, the suspect motives of those advancing the environmental agenda.

A related argument for keeping the environment out of the WTO turns on the fear that trade liberalization will grind to a halt under the weight of environmental burdens. Why, ask trade economists, must trade measures be used to enforce international environmental agreements? Shouldn't environmental policy problems be solved with environmental policy tools? Those who wish to separate trade and environmental policy-making also fear that high-income countries will impose lofty environmental standards on low-income countries, depriving them of one aspect of their natural comparative advantage and subjecting them to trade barriers if they fail to perform up to developed country standards (Bhagwati, 1999; 2000).

But while these worries have some basis in reality, they do not provide a justification for complete separation of trade and environmental policies. Certainly, environmentalism should not be used as a cover to disguise trade barriers. Certainly, the tactical partnerships of some environmental groups have been misguided. Certainly, better environmental regulation at both the national and global

² Some trade officials, however, seem not to have learned their economics very well. Many of the comments of the trade leaders who spoke at the WTO's 1999 "Trade and Environment Symposium" reflected serious deficiencies in the understanding of core principles, such as the implications of externalities or the Olsonian logic of collective action. See, for example, the speech of de la Calle (WTO, 1999).

levels could markedly reduce trade-environment tensions.³ Certainly, global-scale environmental efforts should not mean a reduction in the standard of living for people in low-income countries.

But these are not arguments for ignoring the inescapable linkages between trade and the environment. They are arguments for trying to integrate trade and environmental policies in sensible ways. The following sections discuss key areas for research and policy analysis that could help to narrow the divide between trade and environmental policy goals and practices. The next section focuses on strengthening the foundations of environmental policy, while the next two sections focus on issues of economic theory and trade policy.

Strengthening Environmental Policy Foundations

A battle rages among environmentalists over how best to address (and even understand) environmental challenges. Many environmentalists support the concept of “sustainable development” (World Commission on Environment and Development, 1987) and believe that economic growth can, if managed properly, support environmental improvements. A significant number of environmental advocates remain committed, however, to a “limits to growth” paradigm in which trade liberalization contributes to more economic activity and therefore more pollution and unsustainable consumption of natural resources (Meadows et al., 1972; Daly, 1993). But even those who find the promise of sustainable development attractive worry that, in practice, environmental policy tools are not up to the pressures of globalization.

Economists are likely to have little in common with the advocates of lower consumption levels, especially when the burdens of such a policy choice would fall most heavily on those in the poorest countries of the world. But economists can play a role in answering certain persistent environmental research and policy questions which could, in turn, help to expand the common ground between free traders and environmentalists.

Clarifying Concerns about Sustainable Development

Sustainable development has proven hard to define and even harder to put into practice. It is clear that poverty can force people to make short-term choices that degrade the environment, like cutting down nearby trees for firewood despite the likelihood of future soil erosion. But the hope that trade liberalization will lead to economic growth that will alleviate poverty and generate resources for environmental investments sometimes seems to rely on a tenuous chain of events which may well unravel under real-world conditions.

³ Momentum for a revitalized international environmental regime, perhaps including a new Global Environmental Organization to serve as a counterpart and counterbalance to the WTO, seems to be building (Esty, 1994; Ruggiero, 1999; Barrett, 2000; Jospin, 2000).

It is useful to examine these issues in terms of the inverted-U environmental Kuznets curve discussed earlier, which shows a general pattern of increasing environmental degradation up to a certain level of per capita GDP and environmental improvements beyond that point. Environmentalists will always be worried about societies which are living through the portion of the Kuznets curve where growth is accompanied by environmental degradation, even if it can be shown that people are receiving other welfare gains. Economists could, however, significantly bridge the gap with green groups if they were to find ways to reduce the duration and intensity of environmental deterioration as low-income countries grow to middle income. Economists might also confirm that ignoring pollution altogether until middle income levels are reached is a serious policy mistake. Some environmental investments, like protecting drinking water or siting polluting factories downwind of urban areas, have such high benefit-cost ratios that even the poorest countries should undertake them.

As regards the portion of the environmental Kuznets curve in which growth and environmental quality are both improving, many mainstream environmentalists express concerns that either rising wealth or increased population will drive up consumption in ways that undermine prospects for sustainable development. Both economic theory and recent empirical evidence could help to assuage these apprehensions. Development economists have demonstrated that population growth diminishes with wealth. Economists might do more to demonstrate that poverty alleviation is critical for population control, which in turn offers significant potential environmental benefits. More generally, the economics field has had little to say about how to minimize scale effects and maximize the chances that growth will improve environmental quality.

Finally, as noted earlier, certain environmental harms do not appear to diminish with increases in income. Carbon dioxide emissions, for instance, continue to rise, albeit at a decreasing rate, as GDP per capita goes up. It may be that, even for carbon dioxide emissions, the downward portion of the environmental Kuznets curve would be reached at some income level, but no society has achieved the exalted wealth required. If or until that occurs, economists could gain credibility by agreeing that wealth is not an environmental cure-all.

The common theme in this discussion is that the environmental Kuznets curve need not be destiny. The present shape of the curve, as estimated from historical experience, reflects a political economy interaction among trade, growth, and the environment. Trade has a positive effect on the environment (and perhaps a net welfare benefit more broadly) only if environmental policy advances alongside trade liberalization (Anderson, 1992, 1998; Esty, 1994). However, institutional failures in the environmental realm often mean that the requisite strengthening of environmental performance in parallel with trade liberalization may not occur (Chichilnisky, 1994; Zhao, 2000). In this regard, economists should take more seriously the need to find policy strategies that lead to a shorter and flatter Kuznets curve.

Disciplining Free-Riders

Economists and environmental policymakers generally agree on the wisdom of enforcing the "polluter pays" principle, which holds that those who cause environmental degradation should bear the costs. But as a matter of policy, this goal remains elusive. While economists have demonstrated the value of market-based environmental strategies, they have by and large not managed to convince the environmental and political worlds that pollution fees, emissions allowances, or other economic incentives will work in practice. Environmental policy remains underdeveloped in terms of economic sophistication and largely mired in "command and control" approaches. The collapse of the international negotiations over climate change, in part because of disputes over how far to go in using market mechanisms, demonstrates the persistence within the environmental policy community of anti-economics sentiment.

Figuring out how to enact policies that embody the polluter pays principle becomes even more difficult when the scope of the environmental harm is broader than the vista of the regulators. Dua and Esty (1997) argue that "super-externalities," which spill beyond the defined jurisdiction of regulatory authorities in either space or time aggravate the collective action problem.⁴ A small number of scholars have looked at the spatial distribution of issues in the trade domain (Krugman, 1991; Bloom and Sachs, 1998) and at the geographic dimensions of the trade and environment problem (Hauer and Runge, 2000; Esty, 1994), but more work needs to be done in the realm of economic geography.

Transboundary environmental spillovers create a risk of allocative inefficiency and market failure in the international economy. Some mechanism for promoting collective action and for disciplining free riders is therefore required (Baumol and Oates, 1988). Whether free traders like it or not, trade measures are one potential candidate for this function. Admittedly, trade sanctions are imperfect, costly to those who impose them, and may backfire. But at least in some cases, trade penalties have worked (Brack, 1996; Barrett, 1997). Moreover, better tools to discipline free riders in the international environmental domain do not seem readily available. As environmentalists point out, the weakness of the extant global environmental regime cannot be wished away nor dismissed as irrelevant to the question of how environmental goals get squared with the trade liberalization agenda.

There are a number of issues to be investigated which could shed light on the use of trade policy as a tool for enforcement of environmental standards. First, refined theory on the use of trade measures to support environmental cost inter-

⁴ Issues that cross jurisdictional boundaries create a risk of "structural" failure in the regulatory cost-benefit calculus (Esty, 1996). Related problems arise with long-term environmental issues in which there is a risk of market failure because future citizens are not present to cast their "market votes." Some thinking has gone into how to manage problems with long time horizons (Cline, 1993; Revesz, 1999). But if economic theories are to be persuasive to environmentalists, they will have to deal explicitly with the broader set of issues such as threshold effects, nonlinear cost curves, and irreversibility (for example, species destruction).

nalization in the international realm is needed, advancing the preliminary analyses of Charnovitz (1993), Chang (1995), and Barrett (1997). Second, more work to find ways to strengthen the international environmental regime, which could relieve the pressure on the World Trade Organization to play a major environmental role, would be useful (Esty, 1994, 2000a). Such work might build on efforts to investigate the political economy of environmental protection (for example, Keohane, Revesz and Stavins, 1998). Third, the advantages and disadvantages of policy linkages need to be more fully explored. Concerns are sometimes expressed that if trade policy becomes entangled with environmental policy, either or both sets of policies may be unable to advance. Yet the potential benefits of cross-issue policies and trade-offs have been repeatedly demonstrated (Haas, 1958; Carrero and Siniscalco, 1994). Finally, those who wish to limit the trade system's role in enforcing international environmental agreements would find their case greatly strengthened if they could point to workable alternative enforcement mechanisms.⁵

Refining Trade Theory

Environmental perspectives on trade often clash with the settled views of economists. Frequently, the problem reflects a degree of economic misunderstanding by those in the environmental community. But often, there is a kernel (or more) of truth in the environmental position with which the economic community has failed to grapple. In these areas, there are intriguing research opportunities for economists.

Level Playing Fields

Environmentalists often worry that expanded trade will lead to competitive pressures which will push down environmental standards. They fear a regulatory "race toward the bottom" as jurisdictions with high environmental standards relax their rules so as to avoid burdening their industries with pollution control costs higher than competitors operating in low-standard jurisdictions. Thus, they call for harmonization of pollution control regulations at stringent levels, the imposition of "eco-duties" on those with subpar rules, or other policy interventions to "level the playing field."

Economists point out that the existence of divergent circumstances, including variations in societal preferences about the optimal level of environmental protection, is what makes gains from trade possible. If environmental rules vary because of differences in climate, weather, geography, existing pollution levels, population density, risk preferences, level of development, or other "natural" factors, the

⁵ The suggestion that there be more use of carrots (financial rewards for compliance) and less of sticks (trade measures) may be useful in some circumstances. But in other cases, transboundary pollution spillovers represent a serious infringement on property rights, making a "victim pays" strategy inappropriate (Esty, 1996).

variation in standards should be considered welfare-enhancing and appropriate. Clearly, a sweeping presumption in favor of uniform standards fails to grasp the insight of comparative advantage and makes no sense (Burtless et al., 1998). More generally, economists tend to find arguments in favor of regulatory harmonization in a context of economic integration unpersuasive (Bhagwati, 1996, 2000).

Diversity in circumstances generally makes uniformity less attractive than standards tailored to the heterogeneous conditions that exist (Mendelsohn, 1986; Anderson, 1998). But not always. Divergent standards across jurisdictions may impose transaction costs on traded goods that exceed any benefits obtained by allowing each jurisdiction to maintain its own requirements. Sykes (1995, 1999) has demonstrated that market forces will tend, over time, to eliminate such problems. Vogel (1994) argues, in fact, that upward harmonization (a “race to the top”) often occurs. But this logic only applies to product standards, and standards that relate to production processes or methods are not subject to the same market pressures.

Some theoretical work has been done to try to understand the different harmonization dynamics (Bhagwati and Hudec, 1996; Esty and Geradin, 1998, 2001), but more would be useful, as would empirical evidence on what happens to environmental standards in the process of trade liberalization. For example, how often do free trade agreements include commitments to lower environmental standards and how often to higher standards?

Environmentalists also fear that the rules of international trade are biased against their interests. They believe that within the trading system—both WTO and regional trade agreements—free trade principles always trump other policy goals such as environmental protection. Some recent analyses suggest that such a tilt in GATT jurisprudence might once have existed, but is now less pronounced (Charnovitz, 2000; Wofford, 2000). Efforts to illuminate the facts might diminish fears that trade liberalization runs roughshod over environmental issues. Some efforts have been made in this regard (Trachtman, 2000; Burtless et al., 1998), but more would be welcome.

Psychological Spillovers and Ethical Preferences

Most economists acknowledge, at least in theory, that transboundary pollution externalities need to be addressed, but economists tend to be skeptical about claims of psychological spillovers (Blackhurst and Subramanian, 1992; Cooper, 1994). What are we to make of complaints about environmental degradation in China or campaigns to save the rain forest? As long as the harms are localized, shouldn't environmental policy choices (even “mistakes”) in other jurisdictions be accepted? Maybe so from a perspective of economic theory, but most people do not see the world this way. The fact that Chinese workers produce goods under adverse environmental conditions is not celebrated, even if the low standards in China translate into cheaper products in export markets. Why not?

Perhaps economists assume a utilitarianism that is oversimplified. Sen (1977) and others have noted the narrow behavioral assumptions on which most of economics builds, ignoring human realities such as the existence of interdepen-

dent welfare functions. In fact, many people consider themselves, at least to some extent, to be part of a global community. In addition, economists may too readily accept as a given that the policy choices in places like China are locally optimal and do not stop to ask whether Chinese environmental standards truly reflect the will of the people.⁶ By gliding past “choice of public” questions (Esty, 1996), economists simplify their models but diminish the policy traction of their arguments.

Environmentalist concerns about extraterritorial policy choices frequently seem to be paternalistic or even imperialistic. Green groups often think that they know better than the people or governments of other countries, especially developing nations, what constitutes the “right” environmental standard or policy program. Economists have been quick to condemn those who “are keen to impose their own ethical preferences on others, using trade sanctions to induce or coerce acceptance of such preferences” (Bhagwati, 1993).

But trade, like any realm of human endeavor, cannot exist without baseline rules, defined by community standards and values. One such set of rules concerns what constitutes a fair and legitimate basis for comparative advantage. From nineteenth-century British hesitation about trading with the slave-holding American south to Article XX(e) of the GATT, which permits trade restrictions on products made by prison labor, the international trading system has always circumscribed the bounds of acceptable commercial behavior.

The issue becomes one of line drawing. When is a divergent policy in another jurisdiction just a “choice,” worthy of respect and acceptance in a world of diversity? When does it become a violation of moral minimum standards that should not be abided?

A conservative answer here would be that when environmental harms are purely local in scope, then preservationist demands from abroad are overreaching. In such a case, trade policy should not be the primary tool for international environmental policy, and instead environmental advocates should find a way to pay for their preferences in other countries. But if localized environmental harms are vast and there is reason to doubt whether the will of the people is being fairly represented, it makes sense to leave open the possibility that international pressure for a cleaner environment may be justified.

Is There a Race Toward the Bottom?

Economists have strongly rejected suggestions that country-versus-country competitiveness pressures degrade environmental standards.⁷ They argue that the

⁶ A number of economists (Sachs, 1998; Sen, 1999) and others (Esty and Porter, 2000) have begun to argue that a society’s underlying legal, political, and economic structure critically affects economic growth trajectories, environmental performance, and other variables. The extent to which economic and trade theory even applies in a nation may therefore depend on these structural conditions.

⁷ Economists see any such pressures that emerge as mere market-clearing or “pecuniary” effects, not real externalities that distort allocative efficiency (Baumol and Oates, 1988). Interestingly, the legal literature leans in a different direction on this point. Elliott, Ackerman and Millian (1985), for example, explain that real economic externalities will arise if the scope of the cost-bearers and beneficiaries of regulation are not coterminous.

idea that jurisdictions with low environmental standards will become pollution havens, luring industries from high-standard jurisdictions and triggering a back-and-forth downward spiral in environmental standards finds little basis in theory (Revesz, 1992; Drezner, 2000) and lacks empirical support (Kalt, 1988; Low and Yeats, 1992; Repetto, 1995). For example, it does not appear that U.S. pollution control standards have dropped in the aftermath of NAFTA nor following the various rounds of GATT and WTO negotiations over time.

But the real concern is not about a race literally to the bottom. Rather, the concern arises from the possibility that economic integration will create a regulatory dynamic in which standards are set strategically with an eye on the pollution control burdens in competing jurisdictions. The result may be a "political drag" that translates into suboptimal environmental standards in some places.⁸ These effects might involve not only weakened environmental laws, but perhaps more importantly, environmental standards not strengthened as much as they would otherwise have been or environmental enforcement cases not brought.

The evidence here is by no means as one-sided as many economists have come to believe. Some recent empirical studies find races to the bottom (Mani and Wheeler, 1999; van Beers and van den Bergh, 1997). Moreover, a growing theoretical literature, largely published in law journals, suggests that if the market in "locational rights" is flawed, regulatory races toward the bottom may occur (Klevorick, 1996; Engel and Rose-Ackerman, 2001; Esty and Geradin, 2001). A mismatch between the scope of pollution harms and the jurisdiction of regulators, as well as information gaps or technical deficiencies in the regulatory process, or public choice distortions (such as the fact that politicians may be more influenced by highly visible job effects and may overlook more subtle environmental impacts) may lead jurisdictions to set their environmental standards too low (or too high) (Esty, 1996). Moreover, once a trade competitor has deviated from optimal regulatory levels, a welfare-maximizing government may benefit by strategically adjusting its own environmental standards.

Within economics, the welfare effects of interjurisdictional regulatory competition have been carefully analyzed (Fischel, 1975; Oates and Schwab, 1988). However, the application of the theory to the race-toward-the-bottom question in the international trade and environment context has only recently begun to get attention (Levinson, 1997; Fredriksson and Millimet, 2000). New work is beginning to specify those settings in which regulatory competition will improve outcomes and when some degree of harmonization (not necessarily uniform standards) will improve results.⁹

⁸ In many instances, the result will be lower standards (Esty, 1994, 1996). But note that, where NIMBYism (that is, not in my backyard-ism) is pervasive, strategic behavior may create pressures for suboptimally high standards as a way of discouraging local development (Levinson, 1999).

⁹ For a recent study, drawing on the work of economists, lawyers, political scientists, and business professors, and looking at this issue across regulatory domains (environment, labor, tax, banking) and economic integration experiences (United States versus European Union versus WTO), see Esty and Geradin (2001).

The Development and Evolution of Trade Policy-Making

Advances in both the procedures and substantive rules of the international trading system could help to alleviate some trade-environment tensions. A good bit of the environmentalist animosity toward freer trade arises from the closed process by which trade liberalization has historically proceeded and the sense that any expression of environmental concerns, no matter how valid, would not be taken seriously. The World Trade Organization, like GATT before it, has usually done its business through negotiations between governments. Mechanisms for participation by nongovernmental organizations including environmental groups and other elements of civil society have been limited. But the obscure nature of the process and the attempt to channel all political debate to the national level has created an image of the WTO as a star chamber or "black box" where insiders take advantage of their access to the levers of power.

The closed nature of the system had a logic; it shielded the trade regime from special interest manipulation and "capture" (Bhagwati, 1988; Subramanian, 1992). But the organization's future now depends on it becoming more transparent. Beyond building public understanding and acceptance, a more open WTO policy-making process has other virtues. Notably, nongovernmental organizations provide critical "intellectual competition" for both national and intergovernmental decisionmakers (Esty, 1998b). In presenting alternative perspectives, data, policy analyses, and options, these nongovernment organizations force officials to explain and justify their policy choices. There remains, however, work to be done to find ways to maximize the benefits of the interchange while limiting the risk that access will give special interests undue power to manipulate or block outcomes. In this quest, the learning from public choice theory may be helpful.

Economists could also help the trade community to modernize the WTO's substantive rules on a basis of greater analytic rigor. In this regard, several issues stand out at the trade-environment interface.

First, the reliance on a distinction between product standards imposed on imports (generally acceptable) and production process or methods restrictions (generally unacceptable) makes little sense in a world of ecological interdependence.¹⁰ How things are produced matters. Production-related externalities cannot be overlooked. For example, semiconductors manufactured using chlorofluorocarbons destroy everyone's ozone layer. Where international environmental agreements are in place, such as the 1987 Montreal Protocol phasing out chlorofluorocarbons, trade rules should be interpreted to reinforce the agreed-upon standards. Indeed, such a principle can be found in Article 104 of the North American Free Trade Agreement.

A recrafted trade principle that accepts the legitimacy of environmental rules

¹⁰ A potentially ground-breaking WTO decision in the asbestos case has shown more sensitivity regarding restrictions based on process and production methods (World Trade Organization, 2001).

aimed at transboundary externalities would eliminate the risk of the trade regime providing cover for those shirking their share of global responsibilities. A number of economists, including some who have been skeptical about trade-environment linkages, have now come around to view that trade rules must not permit free-riding on global environmental commitments (Cooper, 2000; Bhagwati, 2000). But how this agreement in principle should be translated into actual trade policies has not been clarified. Economists are in a good position to think through the efficiency and equity implications of the issues and options.

Another opportunity for updating of the trade system centers on the traditional rule that, when trade and environment principles clash, only the "least GATT inconsistent" environmental policies are acceptable. Such an approach lacks balance, because clever policymakers can *always* come up with a possible policy alternative that is less restrictive to trade. A more neutral decision rule would focus on whether the environmental standards are arbitrary, unjustifiable, or a disguised restriction on trade. Such a principle seems to be emerging in recent WTO dispute settlement cases, notably the 1998 shrimp turtle Appellate Body decision (Wofford, 2000).

Final Thoughts

A traditional piece of received wisdom about trade policy-making is that more can be accomplished by operating in a closed "club system" beneath the radar of public scrutiny rather than through open debate (Keohane and Nye, 2001). Whether this hypothesis was ever correct is now moot. The World Trade Organization has gained a very high profile, and it will never again be able to operate in the policy shadows (Esty, 2000b). When the trade agenda was perceived to be narrow and technical, the trade regime's performance was of interest only to the trade cognoscenti. But today the WTO's work has much broader impacts, and the trade agenda encompasses nontariff barriers and other issues which impinge on commercial and governmental activities beyond the trade domain. Where once the WTO's legitimacy turned on its capacity to produce good results from a trade perspective, the organization is now subject to much wider scrutiny. If the WTO is to play its designated role as one of the key international organizations managing economic interdependence, it must find a new center of gravity (Schott, 2000).

Going forward, the WTO's authority and public acceptance will have to be founded on a more democratic basis and on a refined ability to reflect the political will of the global community. Such a transformation entails a commitment to transparency and an open trade policy-making process that provides access to nongovernment organizations across the spectrum of civil society. The WTO's future legitimacy requires a more robust trade and environment dialogue, not artificial separation of these policy-making realms. Special interest lobbies will have to be disciplined by exposure and argument, not exclusion (Esty, 1998b).

Environmental rules cannot be seen as simply pollution control or natural

resource management standards; they also provide the ground rules for international commerce and serve as an essential bulwark against market failure in the international economic system. Building environmental sensitivity into the trade regime in a thoughtful and systematic fashion should therefore be of interest to the trade community as well as environmental advocates. In working toward a world of effective environmental protection that is simultaneously free of protectionism, economists could play a substantial role.

■ Thanks to Monica Araya and Brian Fletcher for research assistance and to the Global Environment and Trade Study (GETS) and its funders, especially the Ford Foundation. Thanks also to INSEAD, Stephan Schmidheiny, and Alqueria for support.

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