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SUMMARY

By explicitly giving Congress the power to determine whether environmental issues are effectively incorporated into U.S. trade negotiations, the Trade Act of 2002 institutionalizes a tool for ensuring that the environment is considered in U.S. trade policy. This tool, the environmental review (ER), is a written assessment of the potential environmental benefits and costs of agreements being considered by U.S. trade policy makers. ERs conducted for past agreements, such as the bilateral free trade agreements with Jordan and Singapore, have received criticism for poor methodology and untimely submission. These shortcomings threaten to undermine the efficacy of ERs and further erode the American public's confidence in U.S. trade policy. Beginning with the ER for the FTAA, Congress should examine the methods and processes applied to ERs under the Trade Act of 2002 to ensure that ERs are used to inform trade negotiations in a timely manner, not simply to justify predetermined trade positions.

The Environmental Review of the FTAA: Examining the U.S. Approach

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The Trade Act of 2002 represents the first time in a decade that a U.S. president has secured trade promotion authority. But the act has added significance for those concerned with the environment because it also represents the first time Congress has won oversight of an institutionalized set of environmental objectives in U.S. trade policy. Key among the environmental provisions in the Trade Act is the requirement that the U.S. government conduct "environmental reviews" (ERs) of proposed trade agreements in order to better inform U.S. negotiators about the potential environmental effects of these agreements.

Past attempts to use ERs in U.S. trade negotiations have fallen short of providing timely and useful information to policy makers. In particular, ERs have been widely criticized on methodological grounds, and because they are sometimes submitted too late to have a significant effect on the negotiations for which they are examining. Continuing along this path creates the risk of undermining the utility of the policy instrument itself and subsequently further eroding public confidence in U.S. trade policy. Congress should examine the methods and processes of ERs as spelled out in the Trade Act to ensure that ERs are used to inform trade negotiations in a timely manner, not simply to justify predetermined trade positions.

U.S. trade negotiators have some experience with ERs for bilateral and subregional trade

agreements, but the U.S. trade officials have yet to conduct an ER for more significant multilateral agreements. However, the United States is scheduled to release a draft ER of the proposed Free Trade Area of the Americas (FTAA) agreement in October 2003. Given that negotiations for the FTAA and the new round of global trade talks under the World Trade Organization (WTO) are both about to come to center stage, the codification of ERs under the Trade Act provides a fresh opportunity to improve ER methods and use in U.S. trade policy. Congressional participation and oversight will be essential to ensuring that ERs produce reliable estimates in time to inform decision makers about the extent to which the array of measures in proposed agreements might harm or improve the environment.

What Is an Environmental Review?

An environmental review (ER) is an analysis of the potential environmental benefits and costs of proposed trade agreements. In one form or another, the U.S. government has been conducting such reviews since the early 1990s, when the potential effects of the North American Free Trade Agreement (NAFTA) were analyzed by the U.S. Environmental Protection Agency. It was not until the lead-up to the Third Ministerial Meeting of the WTO in 1999, however, that President Bill Clinton issued Executive Order 13141, which mandated that ERs become a regular component of trade

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policy. Section (2102)(c)(4) of the Trade Act of 2002 requires that the U.S. government conduct ERs consistent with the policy and procedures outlined in the executive order:

The United States is committed to a policy of careful assessment and consideration of the environmental impacts of trade agreements. The United States will factor environmental considerations into the development of its trade negotiating objectives. Responsible agencies will accomplish these goals through a process of ongoing assessment and evaluation, and, in certain instances, written environmental reviews.

Although ERs involve a number of actors, the United States Trade Representative and the Council on Environmental Quality are charged with overseeing the process. The process for an ER of a proposed trade agreement, as specified by guidelines that followed Executive Order 13141, has four parts:

- a “scoping” stage, for determining the relevant categories that should be included in the ER;
- estimates of the agreement’s economically driven environmental effects;
- an analysis of the implications of the proposed agreement for federal laws and regulations; and
- a subsequent examination of the options for mitigating the negative effects and enhancing the positive effects of the agreement on the environment.

Since Executive Order 13141, U.S. trade officials have had the opportunity to conduct ERs for only a handful of bilateral and subregional trade agreements that have been placed on the U.S. trade agenda, such as those with Jordan, Chile, and, most recently, Singapore. (More ERs are planned for proposed agreements with Central America, Morocco, and Australia.) In general, these reviews have concluded

that the effect on the U.S. environment would be small given the insignificant effect on the U.S. economy of trade liberalization with these countries. Although it is true that aggregate-level effects may not be large, these ERs have been criticized for ignoring the marginal environmental costs and benefits of such smaller agreements.

The Environmental Review for the FTAA

If enacted, the FTAA will be the largest regional trading area in the world economy. Because the scale of the FTAA stands in stark contrast to that of the smaller bilateral and subregional trade agreements of recent years, U.S. trade officials will be spending more time and effort on the ER of the FTAA. After a preliminary “scoping” period, the United States made public its proposed methodology for assessing economically driven environmental effects of the FTAA in 2001. A draft of the ER itself is scheduled for completion in October 2003, in time for the next round of FTAA negotiations, scheduled to take place in Miami.

The core of the U.S. proposal for analyzing the trade-related economic (and subsequent environmental) effects of the FTAA relies on results generated from a computable general equilibrium (CGE) model of the U.S. economy. Drawing on prevailing economic theory and numerous simplifying assumptions, CGE models attempt to present a quantitative picture, at one point in time, of the full interaction of markets and industries throughout the economy. CGE models not only provide estimates about the expansion and contraction of exports and imports, but also indicate how such changes could affect the supply chains of intermediate goods producers. Moreover, CGE models estimate equilibrating changes, as markets readjust to these changed conditions and prices rise and fall, and labor moves from contracting to expanding industries.

One can think of a CGE model as a series of equations (connected to massive collections of real data) representing these complex sectoral relationships of the economy. To generate estimates from the model, these equations are solved twice in a recent base year for which data are available. The model is



run once without the trade policy factored in, and once with the trade policy as a factor. The results are a series of numerical estimates regarding the possible effects of the FTAA on the U.S. economy.

Not only will the U.S. approach provide controversial estimates that will be unintelligible to policy makers, it also will fail to take into account some of the largest potential effects of the FTAA—and

The codification of ERs under the Trade Act provides a fresh opportunity to improve ER methods and use in U.S. trade policy.

It is important to note that the estimates represent changes in a hypothetical base year economy, holding all other aspects of the economy, and time, constant.

U.S. trade officials plan to feed the results of such CGE model predictions of the trade-related economic effects of the FTAA into a handful of models that will provide estimates of subsequent environmental effects. According to the proposal, the CGE results will be fed into models developed by the Economic Research Service of the U.S. Department of Agriculture. There are also plans to feed the results into an as yet undeveloped Environmental Protection Agency model. U.S. trade officials estimate that \$400,000 will be needed to complete this exercise, and, as mentioned earlier, they hope to have a series of estimates available to negotiators and the public in October 2003, just before the next round of FTAA negotiations.

The Utility of the U.S. Approach

ERs of trade agreements are welcome and potentially very useful newcomers to the trade policy table. A comprehensive ER of the FTAA would be of enormous use both to negotiators and to a public interested in weighing the options for hemispheric economic integration. Although the current U.S. approach represents progress toward such a review, it still falls far short of its potential. In particular, it suffers from several methodological problems that will hamper the ER's capacity to provide reliable analyses of the potential effects of the FTAA in time to affect the next round of negotiations.

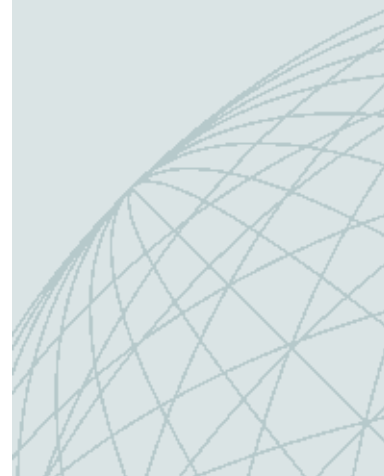
will not provide policy makers with negotiating strategies to mitigate any environmental problems they do identify.

The limitations of the current approach fall into three categories. *First*, the modeling methodology is controversial in and of itself. *Second*, the current approach is limited to providing estimates related to changes in tariffs and trade, not the actual range of issues in the negotiations. *Third*, there is no plan to analyze the environmental effects of NAFTA in order to derive lessons for the FTAA.

Questionable Accuracy of CGE Models

The accuracy of CGE models, even for estimating trade-related economic effects, has long been called into question. Moreover, environmental estimates based on these controversial models are only as good as the original estimates. The limitations of these models are often grouped into two categories. *First*, too many assumptions need to be made if such models are to perform. *Second*, besides lacking transparency, these models are expensive to use and require large quantities of data.

One of the more controversial assumptions necessary for CGE models to work properly is that there is no technological change in the economy. By their very nature, these models consist of two different snapshots of an economy at one point in time. Changes in technology are often the key to both environmental improvement and environmental degradation. The assumption that is perhaps most unrealistic is that there is perfect competition in the economy—in other words, that there are no



barriers to entry among buyers and sellers. In essence, there is no room for oligopolistic multinational corporations in these models. These models also have to hold constant all other aspects of economic activity, such as inflation and exchange rate fluctuations.

All of these assumptions, and more, are embedded in the equations that represent the economy in CGE models, and are then hinged together by further empirical information (called “elasticities”) that represents the interchanges within the economy. Unlike in other sciences, there is a lack of established empirical relationships regarding such elasticities in

TABLE 1. CHANGE IN SO₂ EMISSIONS IN BASE METALS INDUSTRY AFTER NAFTA^a (1,000 POUNDS)

	Ex-ante prediction	Ex-post actual
<i>Canada</i>	10,786	-102,121
<i>Mexico</i>	40,248	-244,003
<i>United States</i>	99,301	63,321

^aFor a further discussion of these calculations see “Economic Analysis in Environmental Reviews of Trade Agreements,” Kevin P. Gallagher, Frank Ackerman, and Luke Ney (NACEC, 2003).

what has actually happened since NAFTA. What is striking about these results is that for Canada and Mexico they not only differ by orders of

ERs (have) become a regular component of trade policy.

economics, and they are often not available for every sector. Thus, in some cases, very old data have to be used and adjusted to make the models work.

Many of the aspects of CGE models are hard to identify by decision makers and members of the public outside the economics profession. For this reason, the results generated by these models can be misinterpreted or oversold as predictors of how the entire economy may change once an agreement is implemented. (Moreover, the economic effects that are used in environmental analysis are classified information and thus not available to the public.) One should keep in mind that these models only analyze how the trade-related changes that would result from a proposed agreement might affect an economy in an experimental base year, while holding all other factors constant. Table 1 shows just how stark the differences between predictions and outcomes can be. The table uses the results of CGE model predictions of the economic effects of NAFTA (using the same model that U.S. negotiators will use for the FTAA) to compare the potential changes in sulfur dioxide (SO₂) emissions in the base metals industry in the United States, Canada, and Mexico (shown in the first column), with the actual change in SO₂ emissions since implementation of NAFTA.

The model’s predictions are quite different from

magnitude, they also move in the wrong direction (that is, emissions actually decreased). For the United States, the predicted amount exceeds the actual figure by “only” about 50 percent. Table 1 exhibits predictions and realities for just one pollutant, but the study in question examined a wide variety of environmental problems, and in all cases the predictions turned out to be nowhere near the actual results. The economic predictions and environmental effect estimates tied to them were analytic estimates of the effects of NAFTA alone, holding everything else constant; they were not good descriptions of what actually happened after NAFTA. Nor will they be good descriptions of what will actually happen after the FTAA takes effect.

Inability of CGE Models to Address a Wide Range of Issues

Market access is only one negotiating group among nine in the FTAA negotiations, yet the core of the U.S. approach is to focus solely on the effects of tariff reductions. The FTAA agenda, however, focuses on building a regime that includes rules on “nontrade provisions” such as international property rights, investments, government procurement, services, and subsidies. Although the economic effects of such provisions will be significant, it



will be difficult to model these effects in a CGE framework. This is especially problematic for ERs because the nontrade provisions will also have environmental effects.

The U.S. modeling approach will not seriously examine the direct effect that increased trade and investment in a free-trade area embracing both Americas will have on the environment in the United States. Two direct effects will need serious evaluation, however: increased trucking and shipping activity and alien invasive species. A recent study by the North American Commission for Environmental Cooperation (NACEC), the organization founded in 1994 to administer the environmental side-agreement to NAFTA, found that NAFTA trade has directly contributed to air pollution in the five key transportation corridors that link North American commerce. Such pollution is estimated to be 3 to 11 percent of all mobile-source nitrous oxide emissions in those regions, and 5 to 16 percent of all particulate matter emissions.

Regarding invasive species, studies have estimated that close to 400 of the 958 species listed under the U.S. Endangered Species Act are thought to be at risk because of competition with alien invasive species. In a January 2000 article in the journal *BioScience*, noted scientist David Pimentel and his

The U.S. approach also fails to capture investment effects. Changes in investment rules under NAFTA have reshaped intraindustry and interindustry trade in the United States, and the FTAA is likely to continue that trend. Increases in investment have direct effects on technology choice and environmental quality. Admittedly, foreign investment can bring better environmental practices and technologies to the United States. However, such instances are the exception rather than the rule. According to the peer-reviewed literature, U.S. states with less stringent environmental regulations tend to attract a greater share of foreign investment in the U.S. economy.

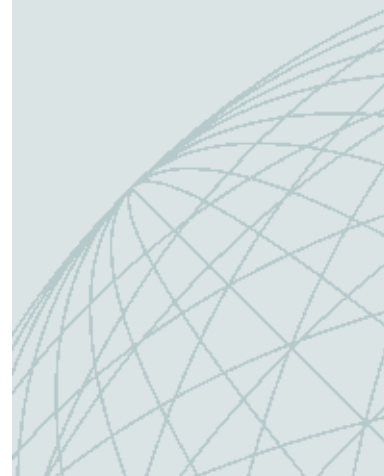
Another shortcoming of the U.S. approach is that it is explicitly focused on environmental effects inside the United States. Contraction of sectors of the U.S. economy because of the FTAA may lead to reduced environmental degradation in the United States; however, corresponding expansion of those same sectors in other parts of the hemisphere may lead to increases in environmental degradation in those areas. Conversely, U.S. economic expansion could lead to environmental improvements among the United States' trading partners.

It has been argued that examining trade's environmental effects beyond U.S. borders infringes upon the sovereignty of the United States' trading

A comprehensive ER would be of enormous use both to negotiators and to a public interested in hemispheric economic integration.

colleagues published a study of the annual environmental and economic costs of invasives in the United States. Pimentel and colleagues found that the economic costs of alien invasive species amount to \$137 billion annually. They also estimated that roughly 90 percent of invasives enter the United States in the course of shipping and other trade-related activities. The resulting trade-related economic costs are approximately \$123 billion.

partners. This is a valid point, and underscores the need for collaborative analysis with other nations as applicable. The fact is, however, that there is great interest across the hemisphere, particularly among developing countries, in understanding the potential environmental effects of economic integration. Indeed, a number of studies have been conducted in collaboration with Latin American researchers in recent years.



In Chile, for example, diverse studies have identified both the positive and negative effects of trade. In certain sectors, such as mining, trade liberalization has contributed to the development and implementation of environmentally friendlier technologies. A NACEC study on Mexico showed how some of the most significant trade shifts under NAFTA have had net effects on the environment that could have been revealed prior to the signing of the agreement. NACEC's work has shown that the surge in U.S. exports since enactment of NAFTA has put considerable pressure on poor corn producers in rural Mexico. Such pressure may increase the rates of poverty and migration, and may be threatening the rich plant biodiversity cultivated by

A Failure to Learn from NAFTA

The FTAA is often called a "NAFTA for the hemisphere." Yet the U.S. proposal lacks a plan to analyze the environmental effects of NAFTA in order to derive lessons for the FTAA. Put another way, the United States will not conduct an *ex post* analysis that would examine past experiences with economic integration in order to draw out lessons for future policy; rather, it will rely solely on the CGE-based, *ex ante* analysis and use a proposed policy as its starting point.

The United States' apparent disinclination to draw lessons from NAFTA surprises many experts. What is odd is that the United States played a key role in developing and implementing the "Analytic

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Mexico's traditional farmers and relied on as a public good by the world's crop breeders. In Argentina's fishery sector, a United Nations Environment Program (UNEP) study revealed that trade liberalization caused alarming overexploitation of key resources such as the hake fish. Overexploitation was accompanied by imperfect competition and deterioration of labor conditions. A forthcoming assessment of Brazil by a non-governmental organization will show that the trade-led expansion of soy cultivation has led to increases in chemical-intensive agricultural practices in ecologically sensitive areas. In Ecuador, a UNEP study of the banana sector documented how producers were able to harmonize the objectives of environmental protection with competitiveness and trade goals. In addition to these studies, the Organization of American States is currently engaged in several assessments of the potential environmental effects of economic integration on the environment in Latin America. Once these findings become available, U.S. trade officials should consider them in formulating their ER of the proposed hemispheric free-trade agreement.

Framework for Assessing the Environmental Impacts of North American Free Trade," a fairly comprehensive methodology produced by NACEC. Since its inception, NACEC has conducted more than 30 studies of the environmental effects of NAFTA. Not only have such analyses proven useful to environmental ministries in the three NAFTA countries, they have included the participation of a broad range of civil society organizations. What is puzzling is that U.S. negotiators make no mention of the NACEC methodology, process, or results in their entire FTAA proposal.

Toward More Comprehensive Reviews

Congress should ensure that five specific improvements are made to the U.S. approach to the ER of the FTAA.

First, ERs should be tied to the negotiations themselves. Members of Congress and their constituents should be especially eager to understand how the environmental effects of increased investment, the liberalization of intellectual property rights law, reductions in subsidies, and changes in government procurement standards



will affect the environment both in their district or state and at the national level. Canada's assessment is an interesting model that should be considered because it has attempted to estimate the potential effects of a much broader set of issues that will be considered in the FTAA and because it chose not to rely solely on CGE estimates.

Second, a variety of analytical methods should be used. CGE models provide a controversial and limited approach to estimating trade-related effects. A number of less controversial, less expensive, more transparent techniques are available such as econometric forecasting, partial equilibrium analysis, and subsequent input-output analyses.

Third, the NAFTA experience should be taken into consideration. Such *ex post* analyses can be useful complements to the more speculative *ex ante* methods. A review of NAFTA's environmental effects could be done quickly and cheaply through NACEC. Such an approach would be similar to that of Canada, which will conduct an *ex post* analysis of its Uruguay Round commitments to supplement its *ex ante* analysis of the current Doha Development Round.

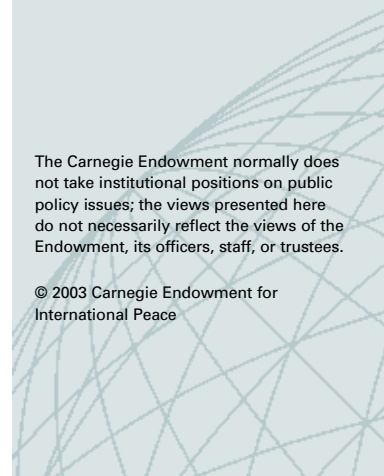
Fourth, the United States should work with trading partners to conduct satellite ERs on the environmental effects of the FTAA across the hemisphere. This would be a good way to implement section (2102)(b)(11)(d) of the Trade Act of 2002, which states that the United States should strengthen the capacity of its trading partners to protect the environment. The United States is currently considering assisting several Central American nations in conducting an ER of the FTAA. Congress should see to it that these states receive this assistance, and that it is adequately funded.

Fifth, the United States needs to include mitigating and alternative strategies in the ER. Previous ERs have not included such strategies, even though they are specified in Executive Order 13141. The interests of negotiators, Congress, and the U.S. public are all served by the availability of such policy options.

The Trade Act of 2002 gives Congress the leverage it needs to see to it that the ER becomes institutionalized as a carefully crafted tool for ensuring adequate consideration of environmental aspects of U.S. trade policy. If U.S. trade policy makers can get the process and methodology right for the hemispheric free-trade agreement ER, that accomplishment will not only have implications for the FTAA negotiations, but will set precedents for the upcoming WTO round—a series of negotiations that will have even deeper effects on the U.S. economy and environment than the FTAA. ■

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