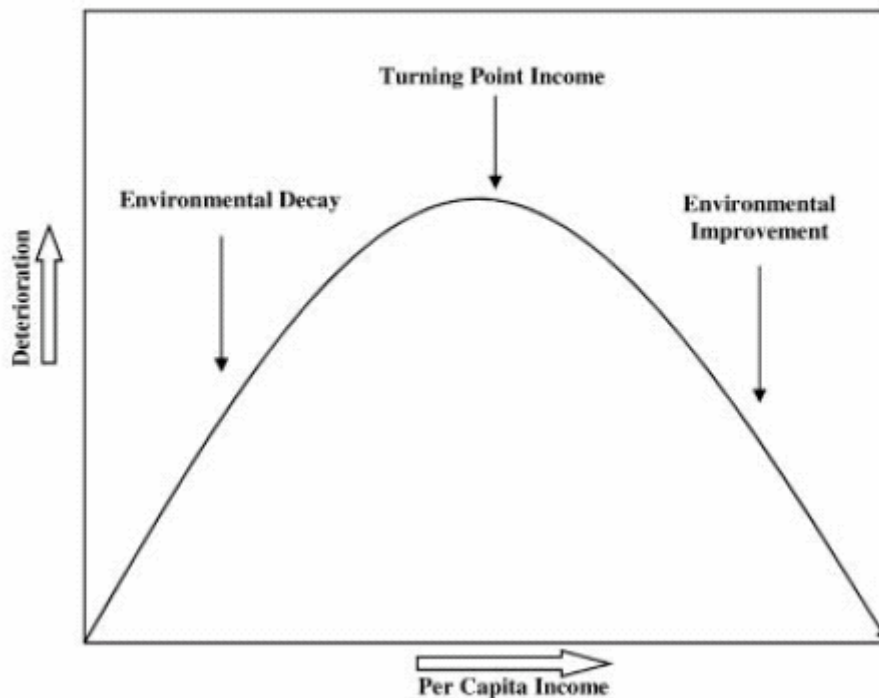


Notes on Trade and the Environment

1. The environmental Kuznets curve (EKC)
2. Does trade help the environment?
3. International institutions and agreements
4. What about capital mobility?

1. The environmental Kuznets curve

Figure 1: A Typical EKC Diagram



Peak is at per capita income of \$5000 to \$6000 (1985\$). Source: Grossman and Krueger (1993, 1995).

Interpretations: (1) Industrialization creates pollution, then as income rises, and preferences shift toward cleaner environment and resources become available for clean-

up, pollution falls; (2) Compositional -- as the economy's structure shifts from agrarian to industrial to services, pollution rises and then falls.

Simple minded conclusion: Just get rich, and pollution will solve itself. Since trade fosters income growth, trade supports the environment eventually.

More nuanced view: The correlation arises from joint factors, so no causality can be imputed.

2. How can trade affect the environment?

2.1 Regulation

Win-win/elimination of distortions (i.e., eliminate subsidies to coal, barriers to imports of fuel efficient Japanese cars as in the 1980's VER).

Porter Hypothesis – “technology forcing” via regulation.

2.2 Openness to trade

“Race to the bottom”: Question is whether the costs of environmental regulation are sufficiently large relative to labor cost differentials and market access issues to matter that much. Grossman and Krueger, “Environmental impacts of a NAFTA” (1993) vs. Smarzynska and Wei, “Pollution havens and Foreign Direct Investment,” NBER WP No. 8576 (2001).

Gains from trade (technology, managerial efficiency)

2.3 Evaluation

Antweiler, Copland and Taylor find scale elasticity of SO₂ of 0.25 to 0.50, and technique elasticity of 1.25 to 1.5; hence, net benefit from trade. But modeling does not take into account possible common factor.

2.4 Factor endowments, trade, pollution havens

Belief is that lower pollution standards in LDCs will lead to movement of dirty industries from developed to developing countries. But empirical evidence suggests that opening up to trade leads to greater SO₂ emission in rich countries (because developed countries are capital abundant and dirty industries tend to be capital intensive).

3. International institutions and agreements

3.1 FTAs

Deep harmonization attendant with some FTAs implies some environmental issues arise. Best example: NAFTA which included side agreements. Also US-Jordan FTA, which included in text environmental restrictions. Note: The expropriation provision in the investment chapter were key (is closing down a toxic dump in Mexico expropriation).

4.2 WTO

Main fear: collision MFN provision of Article I (nondiscrimination) and national treatment provision of Article III against Article XX provisions allowing for exceptions due to environmental and other concerns.

Second fear: WTO panels of the Dispute Settlement Mechanism. But in four cases, environmental concerns should have been allayed: asbestos, Venezuelan reformulated gasoline, hormone-fed beef, turtles and shrimp. Turns out that discrimination was incidental and unintended, so slight rewriting of regulations/laws made provisions WTO consistent. Below are some case studies from Frankel, "The Environment and Globalization," NBER WP No. 10090 (2003):

Canadian Asbestos

One case is considered a clear win for the environmentalists. The WTO Appellate Body in 2001 upheld a French ban on asbestos products, against a challenge by Canada, who had been exporting to France. This ruling made real the WTO claim that its charter gives priority to health, safety and environmental requirements, in that for such purposes GATT Article XX explicitly allows exceptions to the Most Favored Nation and national treatment rules.

Venezuelan reformulated gasoline

In the reformulated gasoline case, Venezuela successfully claimed that US law violated national treatment, i.e., discriminated in favor of domestic producers (with regard to whether refineries were allowed to use individual composition baselines when measuring pollution reduction). The case was unusual in that the intent to discriminate had at the time of passage been made explicit by U.S. administration officials seeking to please a domestic interest group. If the WTO had ruled in the US favor, it would have been saying that it was fine for a country to discriminate needlessly and explicitly against foreign producers so long as the law came under an environmental label. Those who oppose this panel decision provide ready-made ammunition for the viewpoint that environmental activism is a false disguise worn by protectionist interests.

The United States was not blocked in implementing its targets, under the Clean Air Act, as commonly charged. Rather, the offending regulation was easily changed so as to be nondiscriminatory and thus to be permissible under the rules agreed by members of the WTO. This case sent precisely the right message to the world's governments, that environmental measures should not and need not discriminate against foreign producers.

Hormone-fed beef

What happens if the commodity in question is produced entirely, or almost entirely, by foreign producers, so that it cannot be conclusively demonstrated whether ban, or other penalty, is or is not discriminatory? The WTO has attempted to maintain rule that such measures are fine so long as a scientific study has supported the claimed environmental or health benefits of the measure. In the hormone-fed beef case, the WTO ruled against an EU ban on beef raised with growth hormones because the EU conspicuously failed to produce a science-based risk assessment showing that it might dangerous. It thus resembles the case of the EU moratorium on GMOs.

These are genuinely difficult cases. On the one hand, where popular beliefs regarding a scientific question vary widely, a useful role for a multilateral institution could be to rule on the scientific merits. Or, at least, a useful role could be, as under the current WTO procedures, to rule on whether the country seeking to impose the regulation has carried out internally a reasonable study of the scientific merits. This logic suggests overruling the EU bans. On the other hand, the world may not be ready for even this mild level of loss of national sovereignty. If a nation's intent is to protect its health or environment, even if the measure has little scientific basis and even if its primary burden would fall on foreign producers, perhaps ensuring that the ban does not unnecessarily discriminate among producing countries is the best that can be done.

Despite the WTO ruling on hormone-fed beef, the Europeans did not cancel the ban. Their strategy, which they justify with the name "precautionary principle," is to as the Europeans apply it, says to prohibit new technologies that have not yet been proven safe, even if there is no evidence that they are dangerous. A compromise would be to allow imports of American beef subject to labeling requirements, as in the Montreal agreement on GMOs, thus letting the consumer decide.

Shrimp-turtle

Perceptions regarding the WTO panel ruling on a dispute about shrimp imports and the protection of sea turtles probably vary more widely than on any other case. The perception among many environmentalists is that the panel ruling struck down a U.S. law to protect sea turtles that are caught in the nets of shrimp fishermen in the Indian Ocean. (The provision was pursuant to the U.S. Endangered Species Act.) In reality, the dispute resembled the gasoline case in the respect that the ban on imports from countries without adequate regulatory regimes in place was unnecessarily selective and restrictive.

The WTO panel and appellate body decided that the US application of the law, in a complex variety of ways, was arbitrarily and unjustifiably discriminatory against the four plaintiff countries (Asian shrimp suppliers). The US had unilaterally and inflexibly banned shrimp imports from countries that did not have in place for all production a specific turtle-protection regime of its own liking, one that mandated Turtle Excluder Devices.

The case could in fact be considered a victory for the environmentalists, in that the WTO panel and the appeals body in 1998 explicitly stated that the US could pursue the protection of endangered sea turtles against foreign fishermen. The United States subsequently allowed more flexibility in its regulation, and made good-faith efforts to negotiate an agreement with the Asian producers, which it could have done in the first place. The WTO panel and appellate body in 2001 found the new US regime to be WTO-compliant. The case set a precedent in clarifying support for the principle that the WTO rules allow countries to pass judgment on other countries' Processes and Production Methods, even if it means using trade controls to do so, provided only that the measures are not unnecessarily discriminatory.

Tuna-dolphin

In an earlier attempt to protect another large flippered sea animal, the United States (under the Marine Mammal Protection Act)] had banned imports of tuna from countries that allowed the fishermen to use nets that also caught dolphins. Mexico brought a case before the GATT, as this predated the WTO, and the GATT panel ruled against the U.S. law. Its report was never adopted. The parties instead in effect worked out their differences bilaterally, "out of court." The case could be considered a setback for trade-sensitive environmental measures, at least unilateral ones, but a setback that was to prove temporary. That the GATT ruling in the tuna case did not affirm the right of the US to use trade bans to protect the dolphins shows how much the environmentalist cause has progressed under the WTO, in the subsequent gasoline, shrimp-turtle, and asbestos cases.

A system for labeling tuna in the US market as either "dolphin safe" or not was later found consistent with the GATT. The American consumer response turned out to be sufficiently great to accomplish the desired purpose. Since 1990, the major companies have sold only the dolphin-safe kind of tuna. The moral is not just that the goal of protecting the dolphins was accomplished despite globalization in its GATT incarnation. The moral is, rather, that globalization was instrumental in the protection of the dolphins. The goal could not have been accomplished without international trade, because American citizens would have had no

effective way of putting pressure on Mexico. Leaving the US government free to regulate its own fishermen would not have helped.

4. What about capital mobility?

Copeland and Taylor argue that factor composition of output matters very importantly for environmental outcomes. While trade may affect that to some degree, factor mobility (the ability of capital to move around) may affect factor composition even more. But there is little empirical/econometric evidence to support the argument that it is, or is not, important.

Interestingly, Copeland and Taylor cite empirical evidence that more open economies have cleaner industries, which is counter to the pollution havens hypothesis.