

## Trade, WTO and the Environment

**P**ARTICIPANTS IN LAST month's World Trade Organization meetings in Seattle faced large and intense demonstrations critical of what many demonstrators saw as the organization's indifference to environmental issues.

Environmentalists have long been concerned over what they see as the links between trade liberalization and environmental danger. Some groups argue that polluters that would never be permitted to operate in developed countries take their operations to more compliant developing countries—just as soon as developed countries drop their trade barriers by enough to make exporting back to these countries profitable. According to this view, some developing countries are happy to get the jobs and will tolerate the pollution. Environmentalists sometimes refer to such relocations and exporting as “environmental dumping.”

This explanation is troubling, and whether it is widespread enough to be problematic or not, evidence suggests that poor countries sometimes pollute more as they grow. If this is how economic development works when trade liberalization takes place, it is easy to see why so many demonstrators turned out in the streets of Seattle.

The question is, Is this really how economic growth, trade liberalization and pollution interact? Research by Princeton University professors Gene Grossman and Alan Krueger offers a perspective that is subtler and more complicated and that raises questions about the virtues of discouraging or placing conditions on trade liberalization.

As a background, it is useful to recall that trade and trade liberalization spur countries' growth.<sup>1</sup> What complicates the story is the relation between growth and pollution. Grossman and Krueger's detailed picture of the connection between income per capita and air pollu-

tion in 42 countries and between income per capita and water pollution in 58 countries suggests a complicated relationship between growth in income per capita and pollution.<sup>2</sup>

The authors investigate whether pollution typically increases with income per capita, whether it sometimes increases and sometimes declines, or whether it always declines. Behind this examination is the question of whether or not, above a certain income per

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capita, countries begin to treat clean air and clean water like anything else they want more of—that as countries grow richer they will pay for laws and law enforcement that will clean up their environment. The other question is, of course, At what levels of income per capita will countries start their cleanups?

Grossman and Krueger perform econometric analyses on the connections between a nation's income per capita (among other variables) and the incidence of sulfur dioxide and smoke in the air and of lead, arsenic, nitrates, fecal coliform bacteria and a host of

other contaminants in the water.

The results are rather different from what might make some demonstrators hit the streets. The authors find not only that pollution does not invariably increase with income per capita but that there is typically a humpbacked relation. That is, pollution increases up to a point and then falls as countries with incomes above that point take steps to reduce a particular contaminant.

In the cases of sulfur dioxide and smoke, for example, once a country's income reaches levels comparable with Mexico's and Malaysia's, respectively, the quantities of those contaminants begin to fall. Other contaminants typically reach their peaks at lower incomes per capita. Countries start doing something about lead in the water when they reach an income per capita comparable with Peru's. Countries start to improve the oxygen levels in water at about the income per capita of Botswana. With some contaminants, such as cadmium and nitrates, income per capita levels are relatively high before a country does much. But in all cases, countries begin pushing down pollution when their incomes per capita grow to levels well below that of the United States.

If free trade means growth, maybe free trade is what environmentalists really want.

—William C. Gruben

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### Notes

<sup>1</sup> An excellent source of information is offered by Jeffrey Frankel and David Romer in “Does Trade Cause Growth?” *American Economic Review* 89, June 1999, pp. 379–99.

<sup>2</sup> Gene Grossman and Alan Krueger, “Economic Growth and the Environment,” *Quarterly Journal of Economics* 110, May 1995, pp. 353–77.