

Comment on Grether and de Melo

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Although much commentary on the consequences of the latest wave of international market integration has focused on economic matters, a vocal and important element of the policy-making community has been concerned with the environmental effects of globalization. With an eye to journalistic and policy-making audiences, environmental critics of trade, investment, and other reforms quickly coined two terms that have subsequently gained widespread currency, specifically the “pollution havens” hypothesis and the “race to the bottom” hypothesis. These seemingly plausible conjectures about how firms and governments behave in the global economy have now been subject to considerably scrutiny by researchers, as the balanced and methodical paper by Grether and de Melo ably demonstrates. It turns out that neither hypothesis is an accurate general characterization of firm or government behavior; yet, certain circumstances can be identified where these hypotheses might not be at odds with observed behavior. This conclusion probably confirms what cautious observers from all camps have known all along, and serves the useful purpose of taking some of the wind out of the sails of the more partisan commentators.

In this comment I shall focus on the fourth section of Grether and de Melo’s chapter, which attempts to quantify the effects of regulatory gaps on international trade flows in selected “non-polluting” and “polluting” industries. One of the goals of their analysis is to examine whether higher international transportation costs in “polluting” industries would—for a given regulatory gap—diminish the incentives for firms to relocate production from the industrialised economies to the developing countries. The logic, apparently, is that relocation would require shipping products from a production location in new developing country to customers in industrialized countries and that high international transportation costs would erode (if not entirely offset) any cost advantage of shifting production to a jurisdiction with less stringent environmental regulations. Consistent with this thesis Grether and de Melo found that, in a traditional gravity equation framework, the (absolute value) of the estimated distance elasticities were larger for five goods that are known to involve greater pollution during production than a composite of other goods that are thought to

involve less pollution. In interpreting this finding, much turns on how convinced one is that the estimated distance parameters are really picking up international transportation costs and not some other distance-related cost of conducting international trade, such as the cost of acquiring information at potential sales opportunities. Indeed one might ask what is the evidence that the latter costs are greater for products made in “polluting” industries? In this regard, it is also worth noting Grossman’s skepticism about the plausibility of the magnitude of estimated distance elasticities in gravity equation studies (Grossman 1998).

In my view, the weakest aspect of Grether and de Melo’s analysis concerns the construction and interpretation of the variable proxying for the regulatory gap. Grether and de Melo use bilateral differences in per capita national income to proxy for national differences in the stringency of environmental regulation, an assumption that they justify by making reference to a prediction of a theoretical model in Antweiler, Copeland, and Taylor (2001). They then go on to examine whether the estimated parameter for this proxy variable is a statistically significant determinant of bilateral trade flows. In only two of the five polluting industries (non-metallic minerals and iron and steel) is the estimated proxy positive and statistically significant (see the parameter estimates for α_9 in table 5). Moreover, these positive elasticities are remarkably small when compared to the size of the estimated elasticities of the traditional gravity variables, such as national income. Taking a unitary elasticity for national income (which is in line with the relevant parameter estimates reported in table 4), in the case of non-metallic minerals the estimated elasticity on the regulatory gap term implies that a one percent increase in this gap would have an effect on trade flows equal to an eighth of the size of a one percent change in gross domestic product of either trading partner. It would seem then, in terms of the impact on trade flows, national differences in environmental regulation have little economically significant effect on trade flows.

Or do they? The interpretational problem arises from the fact, as Grether and de Melo note, that in many trade models differences in per-capita national incomes are an independent determinant of international trade flows—that is, independent of environmental regulation. Unfortunately, the authors do not draw out the implications of this observation for the interpretation of the estimated parameters. Essentially, the

estimated parameter on differences in per-capita national incomes conflate the effect on trade flows created by national differences in environmental regulations with another independent determinant of trade flows. Worse, in the approach taken in this chapter, there appears to be no way to separate out these two influences. This implies that the estimated parameter for per-capita income differences of -0.06 for non-polluting manufacturing industries could include a small component that is due to regulatory gaps (say $+0.02$). Or the latter could be large too (say $+0.7$). The point is that we just cannot tell how large the latter is. Consequently, this chapter does not accomplish one of its own objectives, namely, to estimate the effect of national differences in environmental regulation on international trade flows. It would appear, then, that another proxy for those national differences is called for if this hurdle is to be overcome in future research.

References:

Antweiler, A, B. Copeland and M.S. Taylor (2001), "Is Free Trade Good for the Environment?" *American Economic Review*, 91, 877-908.

Grossman, Gene (1998), Comment. In Frankel (ed.), *The Regionalization of the World Economy*. Chicago and London: The University of Chicago Press.