

Trade and the Environment hand-out

Environmental economics quickly.

A key concept in environmental economics is that of “externalities.” An externality is a external effect (cost) of a private action or transaction that is not taken into account by the private actor.

Social costs = private costs + external costs

Social benefits = private benefits + external benefits

When there are external costs or benefits, a free market produces too much or too little of the good.

Policies for externalities that make prices “right” (that is, reflect social costs and benefits)

1. regulation: allow the externality to the point where $MSC = MSB$
2. taxes or subsidies: levied on polluting activities to make $MPC = MSC$
3. pollution permits: firms are required to possess permits for each unit of pollution emitted and these permits can be bought and sold. The total number of permits is chosen so that $MSC = MSB$
4. assign property rights (e.g., to air quality): the Coase theorem says that costless bargaining leads to the efficient level of the externality **if** there are few sellers, few buyers, and low (zero) transaction costs.

So we have well developed ideas about how to deal with local pollution when there is no trade (and a competitive market and information about how to estimate the SMC curve). If prices are right, then gains from trade analysis is standard.

What about when prices are “wrong”/ externalities are non-local?

A taxonomy for manufacturing

Copeland and Taylor have built upon this simple story to create a taxonomy for the effect of trade on environmental quality: Net effect is ambiguous.

1. Scale- Negative effect on environment
2. Sectoral composition- Ambiguous effect on environment
3. Income (gains from trade increase incomes- we know demand for environmental quality will translate into demand for environmental regulation; so effect is positive)

The possibility of the pollution haven hypothesis

Can countries enhance their “competitiveness” by competing on low environmental standards?

Pollution crosses boundaries/ Non-use values are significant

There are pollution problems that are irredeemably global in scope and so cannot be regulated by one country.

What do the data tell us?

It’s clear from our discussion so far that a priori it isn’t clear what effect trade liberalization has on environmental quality or what the implications of this effect are for gains from trade. We have identified both positive (income, sectoral) and negative (sectoral, scale) effects of trade on environment. This means we need to look at the data.

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Trade and environment in macro data

Copeland and Taylor have tested their theoretical model. For sulfur dioxide, they find that sectoral and income (or technique) effects are positive, scale is negative. In net, a small positive effect of trade on environment.

Frankel and Rose (2002) address the fact that trade and income are endogenous. They find that, controlling for income, there is a positive effect of trade on some measures of environmental quality (SO₂, NO₂). No evidence of a race to the bottom. Larger effect on environment seems to come from income itself...

Income and environment in macro data

The endogeneity of trade and income creates problems both with what we want to measure and how we get confidence in statistical results when investigating the relationship between trade and the environment..

If we are confident that trade increases incomes in a causal sense (which we are not- but that is another lecture), we can focus on the relationship between income and environmental quality.

Here there is quite a bit of evidence of an Environmental Kuznets Curve

Pollution haven hypothesis in micro data

Labor costs and tax policy seem to drive firm location. Multi-nationals tend to “import” pollution standards of the home country.

What should trade negotiators negotiate about?